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REVIEWS OF NEW BOOKS.

Memoirs of Lady Hester Stanhope, as related by Herself in Conversations with her Physician, &c.
3 vols. Colburn.

NOTWITHSTANDING all we have read of this extraordinary lady in the publications of Lamartine, Fückler Muska, and almost every traveller who visited Syria during her long sojourn on Mount Lebanon, we are well pleased to meet with this more ample and complete biography from the hands of one who had such superior opportunities to study her character, and to obtain possession of the information she was so prone to pour forth into listening ears. Much, therefore, as has been anticipated concerning her, and much has appeared within the last ten years in the pages of the *Literary Gazette*, we repeat our satisfaction at reviewing the miscellaneous, gossiping, and entertaining volumes through which it is now our duty to thread our way.

Naturally partial to his subject, the author represents her as having suffered much from the harshness of the English government in regard to withdrawing her pension—an affair which made much noise some years since (see *Literary Gazette* for 1838, 1839, and 1840)—and consequently as being impoverished, and exposed to many inconveniences, when she was supposed to be rich and exercising a kind of sovereign authority; and he draws a miserable picture of her domestic establishment, and her own violent temper and imperious conduct. Looking upon the circumstances related, were not our pity somewhat touched by the conviction that her “eccentricities” were the results of sheer insanity, and that never was there so mad a lady, we should say that all the miseries to which she was subjected, or subjected herself, were the just and too light punishment for her utter want of feeling and savage barbarity towards every soul within the scope of her crazy vagaries and remorseless selfishness. She died, as such a person ought to die, neglected and forsaken; for those who have no sympathies for their fellow-creatures deserve neither sympathy nor succour—as they have existed for themselves, let them perish by themselves, and rot by themselves. “Before I conclude (says her physician and biographer), I think it necessary to add a few lines respecting the last months of her existence. Lady Hester Stanhope died, as far as I have been able to learn, unattended by a single European, and in complete isolation. I was the last European physician or medical man that attended her, and I was most anxious and willing (foreseeing her approaching fate as I did) to continue to remain with her; but it was her determined resolve that I should leave her, and those who have known her cannot deny that opposition to her will was altogether out of the question. There is no doubt that, by prolonging my stay on Mount Lebanon, I might have been of considerable service to her ladyship. She was about to shut herself up alone, without money, without books, without a soul she could confide in; without a single European, male or female, about her; with winter coming on, beneath roofs certainly no longer waterproof, and that

might fall in; with war at her doors, and without any means of defence except in her own undaunted courage; with no one but herself to carry on her correspondence; so that everything conspired to make it an imperative duty to remain with her: yet she would not allow me to do so, and insisted on my departure on an appointed day, declaring it to be her fixed determination to remain immured, as in a tomb, until reparation had been made her for the supposed insult she had received at the hands of the British government. It would have been expected that the niece of Mr. Pitt, and the grand-daughter of the great Lord Chatham, might have laid claim to some indulgence from those whose influence could help or harm her; and that her peculiar situation in a foreign country, among a people unacquainted with European customs and habits (being left as she was to her own energies to meet the difficulties which encompassed her), might have exempted her from any annoyance, if it did not obtain for her any aid. A woman sixty years old, with impaired health, inhabiting a spot removed many miles from any town, amidst a population whom their own chiefs can hardly keep under control, was no fit object, one would think, for molestation under any circumstances; but, when the services of Lady Hester's family are put into the scale, it seems wonderful how the representations of interested money-lenders could have had sufficient weight with those who guided the state to induce them to disturb her solitude and retirement. Will it be believed, that when, in August 1838, I took leave of her, the beam of the ceiling of the saloon in which she ordinarily sat was propped up by two unsightly spars of wood, for fear the ceiling should fall on her head; and that these deal pillars, very nearly in the rough state in which they had been brought from the north in some Swedish vessel, stood in the centre of the room? Her bedroom was still worse; for there the prop was a rough unplaned trunk of a poplar-tree, cut at the foot of the hill on which her own house stood. It may be asked, whether there were no carpenters or masons in that country? There certainly were both; but, where carriage is effected on the backs of camels and mules, and there are no wheeled vehicles whatever, in a sudden emergency (such as the cracking of a beam) resort must be had to the most ready expedient for immediate safety; and, with her resources cramped by the threatened stoppage of her pension, her ladyship could not venture on new-roofing her rooms—a work of time and expense. The perusal of the narrative which is here submitted to the reader will sufficiently account for Lady Hester's debts; and the most cursory visit to her habitation at Joun (or Djoun, as the French write it) would have proved to any body that the money which she had borrowed was never expended on her own comforts:—tradesman's wife in London had ten times as many. Having no other servants but peasants, although trained by herself, she could scarcely be said to have been waited on; and a tolerable idea may be formed of their customary service, when an eye-witness can say that he has seen a maid ladling water out of a cistern with the

warming-pan, and a black slave putting the teapot on the table, holding it by the spout, and the spout only. But these were trifles in comparison with the destruction and pilfering common to the negroes and peasant-girls; and so little possibility was there of keeping any article of furniture or apparel for its destined purpose, that, after many years of ineffectual trouble, she who was once, in her attire, the ornament of a court, might now be said to be worse clad than a still-room maid in her father's house. Her ladyship slept on a mattress, on planks upheld by tressels, and the carpeting of her bedroom was of felt. She proclaimed herself, with much cheerfulness, a philosopher; and, so far as self-denial went, in regard to personal sumptuousness, her assertion was completely borne out in garb and furniture. How far she deserved that title upon the higher grounds of speculative science and the extraordinary range of her understanding, let those say who have shared with the writer in the profound impression which her conversation always left on the minds of her hearers. Peace be with her remains, and honour to her memory! A surer friend, a more frank and generous enemy, never trod the earth. ‘Shew me where the poor and needy are,’ she would say, ‘and let the rich shift for themselves.’ As free from hypocrisy as the purest diamonds from stain, she pursued her steady way, unaffected by the ridiculous reports that were spread about her by travellers, either malicious or misinformed, and not to be deterred from her noble though somewhat Quixotic enterprises by ridicule or abuse, by threats or opposition.”

From this view we have *a priori* proclaimed our entire and hearty dissent. There was nothing except her descent to obtain for Lady H. Stanhope this honour, this affectionate obedience, this devotedness to her comforts, this sacrifice to her happiness. Lip-service and terrified duty were all her behaviour to her dependants deserved; and curses, not loud but deep, were what she wrought for all her days and all her nights, only redeemed by the favour of some partial caprice; and she reaped what she wrought for in a restless, wretched, and devouring harvest of everlasting petty troubles and graver afflictions. What facts are adduced by her panegyrist in a hundred passages in support of his eulogistic opinion?

“Never was there so restless a spirit—never lived a human being so utterly indifferent to the inconvenience to which she subjected others. Nobody could pursue their avocations in quiet: she must give instructions to every one; and although the unexampled versatility of her talents and genius seemed to inspire her with an intuitive knowledge on all matters, yet it was irksome to remain three or four hours together to be taught how to govern one's wife, or how to rear one's children; how statesmen were made, and how ministers were unmade; how to know a good horse or a bad man; how to plant lettuces or plough a field. * * * The love of power made her imperious; but, when her authority was once acknowledged, the tender of unconditional submission was sure to secure her kindness and largesses. All

this was royal enough, both in its tyranny and its munificence. Unobserved escape was well nigh impracticable by day, in consequence of the insulated situation of the house on the summit of a conical hill, whence comers and goers might be seen on every side; yet, notwithstanding this, on one occasion all her free women decamped in a body, and on another her slaves attempted to scale the walls, and some actually effected their object, and ran away. In addition to these artificial barriers, she was known to have great influence with Abdullah Pasha, to whom she had rendered many services, pecuniary and personal; for to him, as well as to his harem, she was constantly sending presents; and he, as a Turk, fostered despotism rather than opposed it. The Emir Beshyr, or Prince of the Druzes, her nearest neighbour, she had so completely intimidated by the unparalleled boldness of her tongue and pen, that he felt no inclination to commit himself by any act which might be likely to draw either of them on him again. In what direction, therefore, was a poor unprotected slave or peasant to fly? Over others, who, like her doctor, her secretary, or her dragoman, were free to act as they liked, and towards whom she had more *menagements* to preserve, there hung a spell of a different kind, by which the modern Circassian entangled people almost inextricably in her nets. A series of benefits conferred on them, an indescribable art in becoming the depositary of their secrets, an unerring perception of their feelings, brought home in moments of confidence to their bosoms, soon left them no alternative but that of securing her protection by unqualified submission to her will." [A Napoleon of Lebanon.] * * *

"Her maids and female slaves she punished summarily, if refractory; and, in conversation with her on the subject, she boasted that there was nobody could give such a slap in the face, when required, as she could. * * *

"For the last fifteen years of her life, Lady Hester Stanhope seldom quitted her bed till between two and five o'clock in the afternoon, nor returned to it before the same hours the next morning. The day's business never could be said to have well begun until sunset. But it must not be supposed that the servants were suffered to remain idle during daylight. On the contrary, they generally had their work assigned them over-night, and the hours after sunset were employed by her ladyship in issuing instructions as to what was to be done next day; in giving orders, scoldings, writing letters, and holding those interminable conversations which filled so large a portion of her time, and seemed so necessary to her life.

When these were over, she would prepare herself to go to bed, but always with an air of unwillingness, as if she regretted that there were no men commands to issue, and nothing more that she could talk about. When she was told that her room was ready, one of the two girls, *Zeezdom* or *Fatoum*, who by turns waited on her, would then precede her with the lights to her chamber. * * *

"As it had become a habit with her to find nothing well done, when she entered her bedroom, it was rare that the bed was made to her liking; and, generally, she ordered it to be made over again in her presence. Whilst this was doing, she would smoke her pipe, then call for the sugar-basin to eat two or three lumps of sugar, then for a clove to take away the mawkish taste of the sugar. The girls, in the mean time, would go on making the bed, and be saluted every now and then, for some mark of stupidity, with all sorts of appellations. The

night-lamp was then lighted, a couple of yellow wax lights were placed ready for use, in the recess of the window; and, all things being apparently done for the night, she would get into bed, and the maid whose turn it was to sleep in the room (for, latterly, she always had one) having placed herself, dressed as she was, on her mattress behind the curtain which ran across the room, the other servant was dismissed. But hardly had she shut the door and reached her own sleeping-room, flattering herself that her day's work was over, when the bell would ring, and she was told to get broth, or lemonade, or orgeat directly. This, when brought, was a new trial for the maids. Lady Hester Stanhope took it on a tray placed on her lap as she sat up in bed, and it was necessary for one of the two servants to hold the candle in one hand and shade the light from her mistress's eyes with the other. The contents of the basin were sipped once or twice and sent away; or, if she ate a small bit of dried toast, it was considered badly made, and a fresh piece was ordered, perhaps not to be touched. This being removed, the maid would again go away, and throw herself on her bed; and, as she wanted no rocking, in ten minutes would be sound asleep. But in the mean time her mistress has felt a twitch in some part of her body, and ding ding goes the bell again. Now, as servants, when fatigued, do sometimes sleep so sound as not to hear, and sometimes are purposely deaf, Lady Hester Stanhope had got in the quadrangle of her own apartments a couple of active fellows, a part of whose business it was to watch by turns during the night, and see that the maids answered the bell; they were, therefore, sure to be roughly shaken out of their sleep, and on going, half stupid, into her ladyship's room, would be told to prepare a fomentation of chamomile, or elder-flowers, or mallows, or the like. The gardener was to be called, water was to be boiled, and the house again was all in motion. During these preparations, perhaps Lady Hester Stanhope would recollect some order she had previously given about some honey, or some flower, or some leiser — no matter however trifling; and whoever had been charged with the execution of it was to be called out of his bed, whatever the hour of the night might be, to be cross-questioned about it. There was no rest for any body in her establishment, whether they were placed within her own quadrangle or outside of it. Dar Joon was in a state of incessant agitation all night.

"No soul in her household was suffered to utter a suggestion on the most trivial matter — even on the driving-in of a nail in a bit of wood: none were permitted to exercise any discretion of their own, but strictly and solely to fulfil their orders. Nothing was allowed to be given out by any servant without her express directions. Her dragoman or secretary was enjoined to place on her table each day an account of every person's employment during the preceding twenty-four hours, and the names and business of all goers and comers. Her despotic humour would vent itself in such phrases, as these. — The maid, one day entered with a message — 'The gardener, my lady, is come to say that the piece of ground in the bottom, weeded and dug, and he says that it is only fit for lettuce, beans, or *selk* [a kind of lettuce], and such vegetables.' 'Tell the gardener,' she answered vehemently, 'that when I order him to dig, he is to dig, and not to give his opinion what the ground is fit for. It may be for his grave that he digs, it may be for mine. He must know nothing until I send

my orders, and so bid him go about his business.' The consequence of all this was, she was pestered from morning till night, always complaining she had not even time to get up, and always making work for herself. Here is another example. A maid, named Sâada, was desired to go to the store-room man, and ask for fourteen sponges. She went, and added, out of her own head, when she delivered the message, 'Fourteen to wipe the drawing-room mats with' — it being customary in the Levant (and an excellent custom it is) to clean mats with wet sponges. In the course of the day, this slight variation in the message came to Lady Hester's ears, and she instantly sent for the culprit, and, telling her that she would teach her for the future how she would dare to vary in a single word from any message she had to deliver, she ordered the girl's nose to be rubbed on the mats; while this injunction was impressed on her, that, whatever the words of a message might be, she was never to deviate from them, to add to them, nor to take from them, but to deliver them strictly as she received them. In fact, she maintained that the business of a servant was not to think, but simply to obey. Truly did old General Louts-taunau say sometimes, that, with all her greatness and her talents, there was a more wretched being on earth. People have often asked me how she spent her life in such a solitude. The little that has been already related will shew that time seldom hung heavily on her hands, either with her or those about her. In reference to the blind obedience she required from servants, Lady Hester Stanhope one day said to me, 'Did I ever tell you the lecture Lord S***** gave me?' He and Lady S—— had taken me home to their house from the Opera. It was a cold snowy night; and, after I had remained and supped *tete-à-tête* with them, when it was time to go, owing to some mistake in the order, my carriage never came for me; so Lord S—— said his coachman should take me home. When he rang for the footman to order it out, I happened to observe, 'The poor coachman, I dare say, is just got warm in his bed, and the horses are in the middle of their feed; I am sorry to call him out on such a night as this.' After the man had left the room, Lord S—— turned to me, and said, 'My dear Lady Hester, from a woman of your good sense, I should never have thought to hear such an observation.' It is never right to give a reason for an order to a servant. Take it for a rule throughout that you are never to allow servants to expect such a thing from you: they are paid for serving, and not for whys and wherefores.' When Lady Hester Stanhope got up, increasing attention to her own personal wants through long years of bad health had rendered her a being of such sensitiveness, that a thousand preparations were necessary for her comfort; and herein consisted the irksomeness of the service for those about her. Yet this, if ever it was pardonable in any person, was surely so in her; for her nature seemed to lay claim to obedience from all inferior creatures, and to exact it by some talismanic power, as the genii in Eastern tales hold their familiar spirits in subjection."

May all such tyranny, again say we, meet with such return: where there is so little good, there can be no gratitude. But we have done with the *moral* of this miserable body; and would remind our readers that they must look for their entertainment in other features of the Memoirs, the multitude of piquant anecdotes, and variety of amusing descriptions, of which

we shall reserve a few specimens for our next No.*

Travels in North America, with Geological Observations on the United States, Canada, and Nova Scotia. By C. Lyell, Esq., F.R.S., author of "The Principles of Geology." 2 vols. Murray.

DEEPLY stored with European geological knowledge, the author proceeded to extend it by a long and careful survey of the American quarter of our globe, and has here laid before the public the results of his scientific labours. But as the most prominent of these have cropped out in the *Transactions* of various societies at home and abroad, and the essential points of most of them, indeed, have appeared in our own pages, we should not have felt called upon to take such specific notice of this work as we are now about to do, were it confined to geological subjects. But Mr. Lyell has visited America, not merely as a man of science or a philosopher immersed in the investigation of inorganic matter and organic remains, but as a man of sense and of the world, eminently imbued with qualifications to constitute him an astute observer of nature, whether displayed in the forms of landscape scenery or unfolded by the conditions of his fellow-men; temperate, judicious, impartial, inclined to considerate and not extreme views, exercising the rare attribute of common sense, and sound in judgment. Mr. Lyell appears to us, as we have said, to be eminently qualified to convey to the world very accurate ideas of the state of any country through which he travels, and upon which he directs the attention of his fair mind and comprehensive understanding: and this we consider to be particularly valuable with regard to the United States, respecting which such opposite opinions and conflicting sentiments prevail on this side of the Atlantic. We therefore cordially recommend this book to the public, and shall as briefly as possible illustrate its character and support our eulogium by quoting some passages from its contents; only premising, that Mr. Lyell's descriptions go back to 1841-2, and must have an allowance of political events and changed aspects made for them in the lapse of between three and four years. Our first stoppage, after very favourable accounts of Boston and the northern states, is of the date of September 5th, when the writer had been about a month in the country.

"At Bath (he informs us) I hired a private carriage for Corning. Although there are two railways here with locomotive engines, one leading to the south, the other for conveying the coal of Blossberg to the Erie canal, I looked in vain for the name of Corning in a newly-published map, and was informed that the town was only two years old. Already the school-house was finished, the spire of the Methodist church nearly complete, the Presbyterian one in the course of building, the site of the Episcopalian decided on. Wishing to have a carriage, I was taken to a large livery stable, where there were several vehicles and good horses. The stumps of trees, some six feet high, are still standing in the gardens and between the houses. Our inn-keeper remarked that the cost of uprooting them would be nearly equal to that of erecting a log-house on the same place. I amused myself by counting the rings of annual growth in these trees, and found that some had been only forty years old when cut down; yet when these began

to grow, no white man had approached within many leagues of this valley; most of the older stumps went back no farther than two centuries, or to the landing of the pilgrim fathers, some few to the time of Sir Walter Raleigh, and scarcely one to the days of Columbus. I had before remarked that very ancient trees seemed uncommon in the aboriginal forests of this part of America. They are usually tall and straight, with no grass growing under their dark shade, although the green herbage soon springs up when the wood is removed and the sun's rays allowed to penetrate. Some of the stumps, especially those of the fir tribe, take fifty years to rot away, though exposed in the air to alternations of rain and sunshine, a fact on which every geologist will do well to reflect, for it is clear that the trees of a forest submerged beneath the waters, or still more, if entirely excluded from air, by becoming embedded in sediment, may endure for centuries without decay, so that there may have been ample time for the slow petrification of erect fossil trees in the carboniferous and other formations, or for the slow accumulation around them of a great succession of strata. I asked the landlord of the inn at Corning, who was very attentive to his guests, to find my coachman. He immediately called out in his bar-room, 'Where is the gentleman that brought this man here?' A few days before, a farmer in New York had styled my wife 'the woman,' though he called his own daughters 'ladies,' and would, I believe, have freely extended that title to their maid-servant. I was told of a witness in a late trial at Boston, who stated in evidence that 'while he and another gentleman were shovelling up mud,' &c.; from which it appears that the spirit of social equality has left no other signification to the terms 'gentleman' and 'lady,' but that of male and female individual."

This is a good specimen of general observation on natural history, and the delineation of national characteristics; and the following comparison on matters of public interest may well be thought of now when the past is clamorous for remedy, and yet the present is proceeding very like the past. Mr. Lyell gives an account of the Lowell Institute at Boston, and its plentiful provision for lectures (more than thrice as much as in England), arising out of a prohibition from building in the will of Mr. Lowell, who endowed it with above 70,000£.; and proceeds to offer his just remarks.

"In the present case, the testator provided that not a single dollar should be spent in brick and mortar, in consequence of which proviso, a spacious room was at once hired, and the intentions of the donor carried immediately into effect, without a year's delay. If there be any who imagine that a donation might be so splendid as to render an anti-building clause superfluous, let them remember the history of the Girard Bequest in Philadelphia. Half a million sterling, with the express desire of the testator that the expenditure on architectural ornament should be moderate! Yet this vast sum is so nearly consumed, that it is doubtful whether the remaining funds will suffice for the completion of the palace—splendid, indeed, but extremely ill-fitted for a school-house! It is evident that when a passion so strong, as that for building is to be resisted, total abstinen^ece alone, as in the case of spirituous liquors, will prove an adequate safeguard. In the 'old country,' the same fatal propensity has stood in the way of all the most spirited efforts of modern times to establish and endow new institutions for the diffusion of knowledge. It is well known that the sum expended in the purchase of the ground, and

in the erection of that part of University College, London, the exterior of which is nearly complete, exceeded 100,000£., one-third of which was spent on the portico and dome, or the purely ornamental, the rooms under the dome having remained useless, and not even fitted up at the expiration of fifteen years. When the professor of chemistry inquired for the chimney of his laboratory, he was informed that there was none; and to remove the defect, a flue was run up which encroached on a handsome staircase, and destroyed the symmetry of the architect's design. Still greater was the dismay of the anatomical professor on learning that his lecture-room was to conform to the classical model of an ancient theatre, designed for the recitation of Greek plays. Sir Charles Bell remarked that an anatomical theatre, to be perfect, should approach as nearly as possible to the shape of a well, that every student might look down and see distinctly the subject under demonstration. At a considerable cost the room was altered, so as to serve the ends for which it was wanted. The liberal sums contributed by the public for the foundation of a rival college were expended in like manner long before the academical body came into existence. When the professor of chemistry at King's College asked for his laboratory, he was told it had been entirely forgotten in the plan, but that he might take the kitchen on the floor below, and by ingenious machinery carry up his apparatus for illustrating experiments through a trap door into an upper story, where his lecture-room was placed. Still these collegiate buildings, in respect of which the public came forward so liberally, were left, like the Girard College, half finished; whereas, if the same funds had been devoted to the securing of teachers of high requirements, station, character, and celebrity; and if rooms of moderate dimensions had been at first hired, while the classes of pupils remained small, a generation would not have been lost, the new institutions would have risen more rapidly to that high rank which they are one day destined to attain, and testamentary bequests would have flowed in more copiously for buildings well adapted to the known and ascertained wants of the establishment. None would then grudge the fluted column, the swelling dome, and the stately portico; and literature and science would continue to be the patrons of architecture, without being its victim."

The following is a remarkable fact; and we are not sure that it is touched upon by Mr. Scoresby:

"In New York the Roman Catholic priests have recently agitated with no small success for a separate allotment of their share of the education fund. They have allied themselves, as in the Belgian revolution, with the extreme democracy to carry their point, and may materially retard the general progress of education. But there is no reason to apprehend that any one sect in New England will have power to play the same game; and these states are the chief colonisers of the west—*gentes in canabala*, by the rapidity of whose multiplication and progress in civilisation the future prospects of the whole confederacy of republics will be mainly determined."

Does not the great influx of Irish emigrants partly account for the circumstances here noticed? but at all events it is not a holy alliance. The reflections on slavery are yet more important.

* Professor Tucker, of Virginia, has endeavoured to shew, that the density of population in the slave states will amount, in about sixty years, to fifty persons in a square mile. Long

* Since writing the foregoing, and questioning the extent of credit to be given to Lady Hester's revelations, we observe a letter from Lord Stanhope in the newspapers, in which his lordship contradicts several of the statements relating to him, and vouches for as emanating from Lady H. Stanhope.

before that period arrives, the most productive lands will have been all cultivated, and some of the inferior soils resorted to : the price of labour will fall gradually as compared to the means of subsistence, and it will, at length, be for the interest of the masters to liberate their slaves, and to employ the more economical and productive labour of freemen. The same causes will then come into operation which formerly emancipated the villeins of western Europe, and will one day set free the serfs of Russia. It is to be hoped, however, that the planters will not wait for more than half a century for such an euthanasia of the institution of slavery; for the increase of the coloured population in sixty years would be a formidable evil, since in this instance they are not, like villeins and serfs, of the same race as their masters. They cannot be fused at once into the general mass, and become amalgamated with the whites, for their colour still remains as the badge of their former bondage, so that they continue, after their fetters are removed, to form a separate and inferior caste. How long this state of things would last must depend on their natural capabilities, moral, intellectual, and physical; but if in these they be equal to the whites, they would eventually become the dominant race, since the climate of the south, more congenial to their constitutions, would give them a decided advantage. A philanthropist may well be perplexed when he desires to devise some plan of interference which may really promote the true interests of the negro. But the way in which the planters would best consult their own interests appears to me very clear. They should exhibit more patience and courage towards the abolitionists, whose influence and numbers they greatly overrate, and lose no time in educating the slaves, and encouraging private manumission to prepare the way for general emancipation. All seem agreed that the states most ripe for this great reform are Maryland, Virginia, North Carolina, Tennessee, Kentucky, and Missouri. Experience has proved in the northern states that emancipation immediately checks the increase of the coloured population, and causes the relative number of the whites to augment very rapidly. Every year, in proportion as the north-western states fill up, and as the boundary of the new settlers in the west is removed farther and farther beyond the Mississippi and Missouri, the cheaper and more accessible lands south of the Potomac will offer a more tempting field for colonisation to the swarms of New Englanders, who are averse to migrating into slave-states. Before this influx of white labourers the coloured race will give way, and it will require the watchful care of the philanthropist, whether in the north or south, to prevent them from being thrown out of employment, and reduced to destitution. If due exertions be made to cultivate the minds and protect the rights and privileges of the negroes, and it nevertheless be found that they cannot contend, when free, with white competitors, but are superseded by them, still the cause of humanity will have gained. The coloured people, though their numbers remain stationary, or even diminish, may in the mean time be happier than now, and attain to a higher moral rank. They would, moreover, escape the cruelty and injustice which are the inevitable consequences of the exercise of irresponsible power, especially where authority must be sometimes delegated by the planter to agents of inferior education and coarser feelings. And last, not least, emancipation would effectually put a stop to the breeding, selling, and exporting of slaves to the sugar-growing states of the

south, where, unless the accounts we usually read of slavery be exaggerated and distorted, the life of the negro is shortened by severe toil and suffering. Had the white man never interposed to transplant the negro into the New World, the most generous asserters of the liberties of the coloured race would have conceded that Africa afforded space enough for their development. Neither in their new country, nor in that of their origin, whether in a condition of slavery or freedom, have they as yet exhibited such superior qualities and virtues as to make us anxious that additional millions of them should multiply in the southern states of the Union; still less, that they should overflow into Texas and Mexico."

The description of the fossil footsteps of enormous birds on the banks of the Connecticut river, almost tempts us into a long extract; but we must resist, in order to find room for more of that different order of topics to which we have dedicated this review. To these belong the following :

" When standing on the wharf at Three Rivers, I conversed with the proprietor of a large estate in the eastern townships, who complained to me that while crowds were passing up the river every week to remote districts, and sometimes returning disappointed, and even occasionally recrossing the Atlantic, he and other farmers were unable to get hands. While he was speaking, a large steamer, with several hundred Scotch emigrants from Ayrshire, came alongside the wharf. They were only to tarry there one hour to take in wood for the engines. My companion went on board, eagerly endeavouring to bribe some of the new comers to settle on his farm, but all in vain. They said they had cousins and friends in Upper Canada, and were all resolved to go there. I could not help sympathising with him in his disappointment, and the more so, as I had seen at Toronto large bands of Irish and Welsh peasants in a state of destitution for want of work; and in spite of the liberality of the citizens, several gangs of them, while we were there, committed robberies in the neighbourhood. It appears that during the late troubles in Canada the tide of immigration was almost entirely stopped for several years; now it is setting in more strongly than ever: but as they come from all parts of the British Isles, it is scarcely possible, unless the whole system of colonising were under government regulation, and conducted on arbitrary principles, to adjust the supply of labour to the various and ever fluctuating local demands. When passing in a carriage over the rich alluvial grounds on the left bank of the St. Lawrence, I expostulated with some of the English proprietors on the intolerable condition of the muddy roads. I reminded them that all this part of Canada was a cleared and cultivated country when half the United States was still a wilderness. They replied, that the French farmers, to whom most of the land belonged, refused to pay taxes for bettering the roads, contending that it was preferable to spend more time on the way, and to wear out their horses and vehicles somewhat faster, than to pay down money to a tax-gatherer. The anecdotes told us by the British settlers of the superstitious horror of the old Canadians at the new inventions and innovations of the Anglo-Americans, were very amusing. The river craft of the Canadian 'voyageurs' was so unrivalled in its way, that we may pardon them for beholding the first steamers with jealousy. One of them is said to have exclaimed, as he saw them ascending the St. Lawrence, ' Mais, croyez-vous que le bon

Dieu permettra tout cela ?' During this tour I often thought of the old story of the American, who said that 'if the United States ever got possession of Canada they would soon improve the French off the face of the earth.' The French partly speak of the late Lord Sydenham as if they really believed him capable of conceiving and executing such a project. On the other hand, not a few of the English settlers, while they praised his zeal and habits of business, and devotedness to the interests of Canada, took pains to persuade me that if his measures were enlightened, his means of carrying them through the legislature were equally unscrupulous. One of his admirers, deeply imbued with the spirit of his policy, is said to have declared, ' We shall never make any thing of Canada until we Anglicise and protestantise it; to which a French seigneur rejoined with bitterness, ' Had you not better finish Ireland first?' Some of the American travellers whom we met here were extremely entertained with the military display of the large army now quartered in this province, the reviews, the bands of music, the trains of baggage-waggons, which they occasionally met on the roads, the barracks of infantry and cavalry, the new fortifications of Kingston, and the old ones of Quebec. All this warlike parade, after a sojourn of nine months in the United States, appeared almost as great a novelty to us as to them; but the resemblance of the colony to a garrison afforded me no pleasure. It was a perpetual remembrance of the late troubles, and of that former mismanagement of which a civil war, however unjustifiable, affords ample proof. It reminded me also of the difficulties with which the wisest and best intentioned government will have to contend, whose task it is to fuse into one harmonious whole two populations so dissimilar in origin and language as the French and British, and all whose ideas on social, political, and religious subjects, are so discordant. It recalled, moreover, to mind, the unwarrantable conduct of those turbulent borderers, the American 'sympathisers,' who poured in by thousands to aid the insurgents, and whose intervention alone rendered the rebellion formidable for a time. Great indignation was expressed to me by many Canadians, that these citizens should have been allowed with impunity, by the governor of New York, to take cannon out of a public arsenal, and invade a friendly territory in time of peace.

' Non cogente quidem sed nec prohibente tribuo.
Some New Yorkers, on the other hand, while they freely condemned the sympathisers, and said they had rejoiced in their defeat, defended their governor, saying it was impossible for him to have foreseen and provided against so sudden a movement along so extensive a frontier; that neither he nor the federal government had troops enough at their command to act as a sufficient police; and that it was too much to expect of them to maintain, permanently, a large standing army for the sake of being prepared for such rare emergencies. That the whole of the British force now kept up in this colony is absolutely needed, I venture not to doubt; but they who refuse to hope for its speedy reduction appear to me to libel by anticipation our future colonial policy. I listened with no small impatience to the wishes expressed by some residents, that this full war-establishment should be permanent, and to their discussions on the desirability of new fortifications, to be executed at great cost by England, and of fleets of war-steamer to be built on the lakes, in order that they might at

all times be ready for an outbreak with the United States. The population of the British possessions in America, in 1842, amounted in round numbers to one million and a half.

Lower Canada	69,000
Upper Canada	536,000
New Brunswick	156,000
Nova Scotia	180,000
<hr/>	
	1,552,000

The annual growth of the population of the United States, with which their wealth and territory keep pace, exceeds at present 700,000 souls, so that every two years' increase is about equal to the number of all the present inhabitants of British America. The mere contemplation of these figures would seem to me enough to convince a reasonable man, that Canada must owe her security from external aggression, not to local armaments and provincial demonstrations, but to the resources of the whole British empire. A surplus revenue at home, or the remission of taxes which press heavily on industry and commerce, and economy in administering our colonial affairs in times of peace, are the true means of fortifying the Canadian frontier. The legislature of Canada have lately voted a sum of money for a geological survey of the province, which has been placed under the direction of Mr. Logan, from whose labours we may soon expect an accurate map, with a description of the rocks and their organic remains, and a comparison of them with the equivalent formations in the United States. My own observations were confined to the valley of the St. Lawrence and its environs, where I was struck with the remarkable analogy between the structure of this part of North America and those portions of Scandinavia which I visited in 1834 and 1836. I seemed to have got back to Norway and Sweden."

And we must return to England, leaving this desirable and instructive publication to the popularity it so well deserves, both from the scientific and the general reader, and its author in the very singular situation of which we are told in the annexed and concluding extract:

"At the falls of Niagara, where we next spent a week, residing in a hotel on the Canada side, I resumed my geological explorations of last summer. Every part of the scenery, from Grand Island above the Falls to the ferry at Queenstown, seven miles below, deserves to be studied at leisure. We visited the 'burning spring' at the edge of the river above the rapids, where carburetted hydrogen, or, in the modern chemical phraseology, a light hydrocarbon, similar to that before mentioned at Fredonia, rises from beneath the water out of the limestone rock. The bituminous matter supplying this gas is probably of animal origin, as this limestone is full of marine mollusca, crustacea, and corals, without vegetable remains, unless some faecula may have decomposed in the same strata. The invisible gas makes its way in countless bubbles through the clear transparent waters of the Niagara. On the application of a lighted candle, it takes fire, and plays about with a lambent flickering flame, which seldom touches the water, the gas being at first too pure to be inflammable, and only obtaining sufficient oxygen after mingling with the atmosphere at the height of several inches above the surface of the stream. At noon, on a hot summer's day, we were tempted, contrary to my previous resolution, to perform the exploit of passing under the great sheet of water between the precipice and the Horseshoe Fall. We were in some degree rewarded for this feat by the singularity of the scene, and the occasional openings in the curtain of white

foam and arch of green water, which afforded momentary glimpses of the woody ravine and river below, fortunately for us lighted up most brilliantly by a mid-day sun. We had only one guide, which is barely sufficient for safety when there are two persons, for a stranger requires support when he loses his breath by the violent gusts of wind dashing the spray and water in his face. If he turns round to recover, the blast often changes in an instant, and blows as impetuously against him in the opposite direction."

The Mission; or, Scenes in Africa. Written for Young People. By Capt. Marryat. 2 vols. 12mo. Longmans.

In the literary vocation which Capt. Marryat has recently adopted, for the instruction of the young in the pleasantest manner, and not forgetting much to inform and interest their seniors, he has not done any thing superior to the *Mission*. Its simple narrative style, and its Daniel-de-Foe-like verisimilitude, carry the reader through all the scenes with the ease of an ambling steed; and at the end he finds that his amusement is attended by a very clear notion of the interior of South Africa, its geography, its people, its natural history, its habits, and its adventures for European explorers. By means of an interesting framework, the author superadds an English and humane feeling; for the mission is in search of the descendants, if any, of a young lady of good family, wrecked among the unfortunate sufferers in the Grosvenor East-Indianman. To satisfy her father on this doubtful and painful subject, Alexander Wilmot traverses Cafraria, in company with Mr. Swinton, an enthusiastic naturalist, and Major Henderson, an equally enthusiastic hunter. Having thrown them into the field, Capt. Marryat, from many publications on the Cape, puts skilfully together the story of their marches, troubles, giraffe-pursuits, lion-fights, affairs with natives, &c. &c., and thus combines into one panoramic view a striking picture of the country, from Cape Town deep into the interior.

It is not easy to illustrate a production of this kind; but we will detach a few passages to avoid the baldness of a mere notice.

"You are well aware how long and strong are the thorns of the mimosa (or kamel-tree, as the Dutch call it, from the giraffe browsing upon it), and how the boughs of these trees lie like an umbrella, close upon one another. A native chief informed me, that he witnessed a lion attacking a giraffe. The lion always springs at the head or neck, and seizes the animal by that part, riding him, as it were. The giraffe sets off at full speed with its enemy, and is so powerful as often to get rid of him; for I have seen giraffes killed which had the marks of the lion's teeth and claws upon them. In this instance the lion made a spring; but the giraffe at that very moment turning sharp round, the lion missed his aim, and by the blow it received was tossed in the air, so that he fell upon the boughs of the mimosa on his back. The boughs were not only compact enough to bear his weight, but the thorns that pierced through his body were so strong as to hold the enormous animal where he lay. He could not disengage himself; and they pointed out to me the skeleton on the boughs of the tree, as a corroboration of the truth of the story."

"They rose early the next morning, and leaving the wagon where it was, again proceeded on horseback in search of the giraffes. They rode at a slow pace for four or five miles before they could discover any. At last a herd

of them were seen standing together browsing on the leaves of the mimosa. They made a long circuit to turn them and drive them towards the camp, and in this they succeeded. The animals set off at their usual rapid pace, but did not keep it up long, as there were several not full grown among them, which could not get over the ground so fast as the large male of the preceding day. After a chase of three miles, they found that the animals' speed was rapidly decreasing, and they were coming up with them. When within a hundred yards, Alexander fired, and wounded a female which was in the rear. The Major pushed on with the dogs after a large male, and it stopped at bay under a mimosa, kicking most furiously at the dogs. The Major levelled his rifle, and brought the animal down with his first shot. It rose again, however, and for a hundred yards went away at a fast pace; but it again fell to rise no more. The female which Alexander had wounded received another shot, and was then also prostrated. 'I have killed a giraffe,' said the Major, standing by the side of the one he had killed; 'it has been a long way to travel, and there have been some dangers to encounter for the sake of performing this feat; but we have all our follies, and are eager in the pursuit of just as great trifles through life; so that in this I am not perhaps more foolish than the rest of mankind. I have obtained my wishes—I have killed a giraffe; and now I don't care how soon we go back again.' 'Nor I,' replied Alexander; 'for I can say with you, when we arrive in England, I too have killed a giraffe; so you will not be able to boast over me. By Swinton's account, if we stay here much longer, we shall have to kill Matabili, which I am not anxious to do; therefore I now say with you, I don't care how soon we go back to the Cape.'"

The bushmen carry away their oxen, and are pursued and overtaken; and we conclude with a portion of the account.

"Having travelled till dark, they halted under hill, and were soon afterwards joined by a party of bushwomen, who continued with them in spite of all their attempts to get rid of them. They were very small in person, well made, and the young were rather pretty in their features: but their ornaments were enough to disgust any one but a Hottentot; for they were smeared with grease and red-ochre, and were adorned with the entrails of animals, as necklaces. The Hottentots, however, appeared to think this very delightful, and were pleased with their company; and as the women shewed them a pool of water, where the oxen could drink, it was not considered advisable to drive them away. But Swinton observed, that it would be necessary to keep a very sharp lookout, as the women were invariably sent by the bushmen as spies, that they might watch the opportunity for stealing cattle. They now resumed their former plan: starting at a very early hour, and travelling till afternoon, when the cattle were allowed several hours to feed, and were then tied up for the night to the wagons. Indeed, the lions were now not so numerous as they had been, and they had more to fear from the bushmen and the hyenas, which were very plentiful. The next day fully proved the truth of this; for the oxen, having been unyoked as usual to feed, about two o'clock in the afternoon, had been led to a hollow of luxuriant pasture by the cattle-keepers, where they could not be seen from the caravan, although they were not half a mile off. Towards dusk, when it was time to drive them in and tie them up to the wagons, it was found that

the cattle-keepers, who had been in company with the bushwomen, had neglected their charge, and they were not to be found. The keepers came running in, stating that a lion had scared the cattle, and that the animals had galloped off to a great distance. But Omrah, who had gone to where the cattle had been feeding, returned to the camp and told Swinton that it was not lions, but bushmen, who had stolen them; and bringing the horses ready saddled to the Major and Alexander, said, that if they did not follow them immediately, the cattle would be all killed. It was also observed that the bushwomen had all disappeared. Swinton, who was well aware of the customs of the bushmen, immediately proposed that they should mount as many as they could, and go in chase, as there was not an hour to be lost. In half an hour a party, consisting of our three travellers, Bremen, Omrah, and three of the most trusty of the Hottentots, who were all that they could mount, set off in the direction which they knew must have been taken so as to conceal the cattle from the sight of those in the caravan; and it being a fine moonlight night, the keen eyes of Omrah tracked them for more than five miles, where they were at fault, as the traces of their hoofs were no longer to be seen. 'What shall we do now?' said the Major. 'We must trust to Omrah,' replied Swinton; 'he knows the habits of his people well; and they will not deceive him.' Omrah, who had been very busy kneeling on the ground and striking a light every now and then with a flint and steel, to ascertain the tract more distinctly, now came up and made them comprehend that the bushmen had turned back upon the very track they had gone upon, and that they must return and find where they diverged from it again. This created considerable delay, as they had to walk the horses back for more than a mile, when they again found the footing of the cattle diverging from the track to the southward and eastward, in the direction of some hills. They now made all the haste that they could, and proceeded so rapidly on the track, that in about an hour they perceived the whole herd of oxen driven up the side of a hill by a party of bushmen. They put spurs to their horses and galloped as fast as they could in pursuit, and soon came up with them; when a discharge of rifles left three bushmen on the ground, and put all the rest to flight. The cattle, which were much frightened, were with some difficulty turned and driven back towards the encampment. In the mean time the disappointed bushmen had turned upon those near, and were letting fly their arrows from the bushes in which they were concealed, and continued thus to assail them till the party arrived at the open plain. One of the Hottentots was wounded by an arrow in the neck; but that was the only accident which occurred to any of the party, and this was not known to our travellers until after their arrival at the encampment, when it was almost day-break; and they were tired with the fatigues of the night, all were glad to obtain a few hours' rest. When they rose the next morning, Swanveit informed them that nine of the oxen were so wounded with the poisoned arrows of the bushmen that they could not live; and also that Piets the Hottentot had been badly wounded in the neck with one of the arrows. Swinton immediately ordered the man to be brought to him, who was well aware of the fatal effects of a bushman's arrow. It appeared that Piets had pulled the arrow out of his neck, but that some pieces of the barb had remained in the wound, and that these his companions had been extracting with their knives, and the

wound was very much inflamed in consequence. Swinton immediately cut out as much of the affected part as he could, applied ammonia to the wound, and gave him laudanum to mitigate the pain, which was very acute; but the poor fellow lay groaning during the whole of the day. They now examined the wounded oxen, which were already so swollen with the poison that there were no hopes of saving them, and they were immediately put out of their pain. Several others were found slightly hurt, but not so as to lose all hopes of their recovery; but this unfortunate circumstance prevented them from continuing their journey for two days; as the whole of the oxen had been much harassed and cut by the bushmen, although not wounded by poisoned arrows. During this delay, the poor Hottentot became hourly worse; his head and throat were much swollen, and he said that he felt the poison working within him. After many hours of suffering, during which swellings appeared in various parts of his body, the poor fellow breathed his last; and the next day being Sunday, they remained as usual, and the body of the unfortunate man was consigned to a grave. This event threw a cloud over the whole caravan; and whenever any of the bushwomen made their appearance at a distance, and made signs that they wished to come into the camp, an angry bullet was sent instantaneously over their heads, which made them take to their heels.

As usual, in this class of writing, with Captain Marryat, he has interspersed some excellent moral reflections and religious precepts; and the whole is written in a spirit to impress the mind with lessons of goodness and humanity.

The Philosophy of the Water-Cure: a Development of the True Principles of Health and Longevity. By John Balbirnie, M.A., M.D., &c. Sm. 8vo, pp. 336. Bath, Binns and Goodwin, If, as we have frequently occasion to remark, the bigotry of the adversaries of innovation is reprehensible, the fanaticism of advocates is also, on the other hand, often so exalted as to counterbalance the evil, and thus leave us pretty nearly where we started.

Dr. John Balbirnie takes up the cause of hydrotherapy with the energy of one who sings all his lifetime, "Wha will not fecht for Charlie?"

To the reflecting observer, the times we live in are pregnant with signs of momentous import. The whole world is in commotion—society is heaving to its centre—as if the throes of some great regenerating change, personal, political, and religious. An impulse is being communicated to the human intellect, that will be far greater in its results than that of the revival of letters. A reformation is in embryo, that will far exceed in depth, extent, and direction, that of the era of Luther." All this *apropos* of the water-cure!

"Long-constituted and long-venerated powers, civil and ecclesiastical, whose tenure of existence is held in popular prestige as much as public utility, are crumbling before the assaults of modern innovation, or falling asunder by their own internal divisions. Mere antiquity commands no reverence, and mere novelty conciliates no favour. Mind is gaining the ascendant over matter, moral power over physical force. The immunities of the privileged class are more closely than ever associated with its obligations—the rights of property with its duties. Individual emolument is being postponed to public advantage. Even the names and symbols of party, erewhile so talismanic, begin to lose their power; and its ancient distinctive tenets, whilom unyielding,

are now forced to bend before the pressure from without. The *spirit* is taking the place of the *letter* in government, law, and literature; and both are once more earnestly contended for in religion."

The bathos to which is, "In such an eventful epoch as this comes forth the water-cure!"

If, however, notwithstanding the able, vigorous, and enthusiastic advocacy of Dr. J. Balbirnie, the water-cure has to wait till the Utopia above expounded is carried into practical operation, we fear very much for its triumphant progress to an universal adoption. Dr. B. entertains no apprehensions of the kind.

"It will behove," he says, "the present or a future home-secretary to look into this. Before twenty years elapse, all these matters, it is to be hoped, will be rectified. If Sir James Graham's 'Medical Bill' (which, so far as it goes, is a real godsend to the profession) passes this session, it will only be the precursor of a sweeping measure of medical police, which the progress of public opinion and its own interests will force the government to adopt. To honourable members, 'ere long, 'coming events' will 'cast their shadows before' in the shape of visions of a 'Hospital Revenue Appropriation Clause,'"

So much for enthusiasm in a cause. In the spirit of philosophical moderation which has ever been our guide, we shall only say with the immortal Bacon: "Surely every medicine is an innovation, and he that will not apply new remedies must expect new evils, for time is the greatest innovator; and if time, of course, alter things to the worse, and wisdom and counsel shall not alter them to the better, what shall be the end?"

The Waverley Novels, Abbotsford Edition. Vol. VIII. Edinburgh, R. Cadell; London, Houlston and Stoneman.

QUENTIN DURWARD and ST. RONAN'S WELL form the 8th vol. of this profusely illustrated edition. A very characteristic portrait of Louis XI. is the frontispiece, and four beautiful views of French scenes, Cologne, Tours, Liege, and Peronne, by Stanfield, are among the embellishments. Peebles and the Tweed from Neidpath Castle, by P. Paton, is another sweet, and appropriate piece. The same artist gives us the pastoral landscape of St. Mary's Loch, and Mr. E. Terry two views of Abbotsford.

Researches, Historical and Critical, in Maritime International Law. By James Reddie, Esq. Advocate. Vol. II. 8vo, pp. 577. Edinburgh, T. Clarke, Benning & Co., Begg & Son; London, Blackwoods; Dublin, Milliken.

This volume discusses the most recent questions, i. e. the questions which have arisen within the present century, on maritime international law; and like its predecessor, displays comprehensive research and strong and logical argument. It seems to place on indisputable foundations the rights of belligerents and of neutrals in maritime war, and points out meliorations which may be anticipated; and is altogether a very valuable treatise on a subject which involves subjects of the greatest weight and importance.

Elothen. Fourth Edit. London, J. Ollivier. We take credit to the *Literary Gazette*, whilst yet *Elothen* lay amid the chaos of publication on the bookseller's counter, unexplored and unnoticed, that it discovered the brilliant treasures of the mine, and hastened to bring them into the light of day. A fourth edition is the best and fittest sequel to the praise we so heartily bestowed upon it.

ORIGINAL CORRESPONDENCE.

To the Editor of the Literary Gazette.

July 8, 1845.

SIR.—I have been much interested in certain letters which have appeared in the *Times* paper, fiercely incriminating Dr. Buckland for certain opinions that are maintained in his *Bridge-water Treatise*. I have carefully reconsidered that treatise, and rise from the perusal with surprise that any body should call the author's orthodoxy in question. It is true that Dr. Buckland believes that many thousands of years elapsed from the creation of the world to Adam, and I can find nothing in Scripture which impugns the fact. If Usher reckoned just so many years from the creation to the deluge, he reckoned from the time of Adam, and not of the world. Believing that the subercations occupied merely days, the archbishop left them entirely out of his chronology, as any one will find from his *Memoria*. As for the 'days,' as it is translated, it is impossible to say how long they were. Sir John F. W. Herschel, in his work on astronomy, defines time as motion. Now, we read in the Bible, that God is every where; therefore there can be no time, which is motion, to Him. Dr. Buckland presumes and believes that Moses wrote by inspiration: and, if so, the word translated *day* may mean any period short of the eternal. The term is not merely a figurative but arbitrary one, when judged by fact.

In conclusion, I would observe that Dr. Buckland's assailant is a wonderfully ill-taught man, I scorn to be hypercritical; but to call an Italian *Scienzi Recuperi*, and the Jewish doctors *rabbis*, to say nothing of many other instances of uncommon ignorance, is really gross. I am, sir, your obliged subscriber,

T. H.

We cheerfully insert this pertinent letter, which takes up a strong insulated position; but, for the complete vindication of science against all the fooleries that have been uttered against it either by flippant presumption or well-meaning ignorance, we would desire every intelligent reader to consult the scourging and irrefragable review of *The Vestiges of Creation* in the *Edinburgh Review* just published, and which is attributed with truth, as will readily be seen in perusing the article, to the pen of Professor Sedgwick. As much doubt still obscures the authorship of that notorious and wonderfully successful work, we may venture to add another conjecture to the list of persons to whom it has been attributed, in the name of Mr. Newman of Manchester.]

NOTES ON ARTS AND SCIENCES.

BRITISH ASSOCIATION.

SATURDAY (continued).

SECTION B.—(Chemical Science.)

1. Graham (Prof.) on a new property of gases.
2. Grove (Prof.), recent experiments on the gas voltaic battery.

3. Miller (Dr.) on the action of gases on the prismatic spectrum.

4. Schönbein (Prof.), experiments on ozone.

5. Boutigny (Prof.), experiments on the spheroidal state of bodies, and its application to steam boilers, and on the freezing of water in red-hot vessels.

6. Prof. Graham's new experiments on what he termed the effusion of gases into a vacuum were detailed, after a luminous introduction in which he summed up known properties of gases in their diffusion through porous bodies. The velocity of atmospheric air being 1, that of gas going out was (if we are not in confusion) 371; and the law of the velocities in the effusion of different gases accorded with their gravity, and the experiments upon them agreed with theory and calculation,—that is to say, with the

theoretical law. The heavier the gas, it was the richer, and it was poor in proportion to its lightness. Having stated the different velocities of oxygen, carbonic acid, hydrogen, carburetted hydrogen, &c., the learned professor pointed out how the principle might be practically applied to the measure and value of the gas furnished by companies, by passing it through a vacuum before it entered the meter. He observed that the same test might be made useful in trying the air in mines, as of course the hydrogen and inflammable gas would pass quicker than any other of a heavier quality. Effusion obeyed the same law as diffusion; but the new property to which he more particularly directed attention, was that to which he gave the name of transpiration. This depended on quite a different law, a law of friction. His experiments on this were made on gas forced through the pores of a dense body under pressure. He had employed stucco, placed under an exhausted air-pump, and measured the velocity of the air forced through by the mercurial gauge of the pump. Thus he found the transpiration of atmospheric air to exceed that of oxygen, and carbonic acid to be more transpirable than either; hydrogen was a third more rapid than oxygen; and the professor advised that liquids should be experimented upon in the same manner, from which he anticipated every advantageous results.

Mr. Bain offered a few remarks on this communication, and thought it would explain the suspension of aqueous vapour in the clouds and other meteorological phenomena; and

Mr. Vernon Harcourt noticed previous experiments of the same nature made by Mr. Cavendish.

2. Professor Grove's experiments involve, amongst others, two principal interesting points—the combination of phosphorus in one cell with the oxygen of another cell; and, if it may be so called, a self-acting constant battery action. Both are new arrangements or modifications of the gas-battery: the first a substitution of phosphorus in nitrogen gas as one element of the combination, instead of the hydrogen element of the oxygen and hydrogen series; the nitrogen plays the part only of an insulator, the phosphorus combining with the oxygen of the cell connected with it. This is another proof in support of the chemical theory of the battery which Professor Grove so ably advocates. One practical advantage to be derived from this novel series is, the power of measuring the minutest possible chemical action; the diminution of the phosphorus, divided by the time, would give, perhaps, a consumption of a millionth of a grain per second. The other arrangement, that we have termed a "self-acting constant battery," would require a diagram for accurate description; suffice it, then, to say merely, that the position of zinc to generate hydrogen, to supply its consumption in the gas-battery, is the principle upon which the "self-acting" rests. This combination carried with it markedly the favourable feelings of the whole section.

3. The author commenced by stating that, owing to the experiments of Dr. Wollaston and Fraunhofer, it is well known that if the prismatic spectrum of diffused daylight be examined with proper precaution, it is found not to present a continuous band of light, but a band interrupted at certain intervals by numerous sharp well-defined black lines, more distinctly visible at certain points than at others. On viewing the light transmitted through the red vapours of nitrous gas by a prism, Sir D. Brewster observed a multitude of other lines,

very remarkable in their mode of arrangement. Dr. Miller was, however, induced to investigate this subject in its relations to the chemical composition of different gases, in consequence of the observations of Prof. Miller of Cambridge and the late Prof. Daniell, that the action of the vapours of iodine and bromine (two elementary substances presenting the closest chemical resemblances) was exactly similar, both in the arrangement and number of the lines produced. He therefore extended his observations to numerous compound bodies, both coloured and free from colour. From these experiments he found, that no depth of any colourless gas that he was able to employ produced any new series of lines, although, when examining the spectrum of diffused daylight during a thunder-shower, he found a new group of lines developed in the brightest portion of the yellow—these, as the rain passed off, gradually disappeared; that the simple fact, that a vapour of gas was coloured, was not sufficient to prove that these lines existed in light that had been submitted to its action—that, for instance, the green gas of chlorine, and the yellow vapour of sulphur and selenium, produced no such abrupt interruptions of the light. He observed likewise, that some simple substances, as bromine and iodine, whose coloured vapours produced dense and numerous lines, lost that property when they entered into combination and formed gases which, like the hydrobromic and hydriodic acids (combinations of these bodies with hydrogen), are colourless. The position of the lines in the spectrum, it also appeared, could not be predicted from the colour of the body; for with the red vapours of nitrous acid the lines were broadest and most numerous towards the blue end of the spectrum, whilst with the green vapour of the perchloride of manganese they were most marked in the green portion itself. Two bodies separately without action were found when combined frequently to produce lines, as occurs with combinations of oxygen with nitrogen and chlorine. Some interesting results were obtained on examining the different oxides of the same body—this is particularly the case with the oxides of chlorine: these substances possess bleaching powers more or less distinctly marked, have all a colour varying between orange and yellowish green, and detonate powerfully by a slight elevation of temperature. The hypochlorous acid, the active principle, as is believed, of common bleaching-powder, represented by the symbol Cl_2O has no action of this kind on the spectrum. Chlorous acid, Cl_2O_3 a bright orange gas, produces a series of remarkable lines in the blue space. Peroxide of chlorine, Cl_2O_5 , produces the same series; and exchlorine, Cl_2O_{13} , likewise produces the same series. It is remarkable that these two last-mentioned gases have been supposed, on chemical grounds, to contain chlorous acid in a state of combination; for when treated with alkalies, they yield compounds of that substance—a conclusion which the optical properties of the gases appear to confirm. The author described a remarkable series of lines as produced by the perchloride of manganese, which are most distinctly visible in the green and commencement of the blue spaces; and he found that the permanganic acid and perchloride of manganese—bodies which respectively contain the same relative proportions of oxygen and fluorine that the perchloride does of chlorine—produce no corresponding effects on the spectrum.

A great variety of other coloured bodies, of most varied composition, were tried, but without yielding any indications of the existence of these lines. Among these were the vapours of

selenious acid, chloride and oxychloride of tungsten, chloride of iron, indigo, alizarin (the orange colouring matter of madder), and several others. Drawings were exhibited, shewing the general grouping of the lines above described, and the relative position they bear, compared with the lines of the solar spectrum as determined by Fraunhofer.

The author also instituted a series of observations with the flame of alcohol coloured by the addition of various saline bodies, in which he found appearances of alternate bright and dark spaces in the spectra thus obtained, still more remarkable than those furnished by the action of coloured vapours on daylight: corresponding spectra were obtained if the coloured light were furnished by exposing the same salts to the heat of the oxyhydrogen jet. Drawings of the spectra furnished by chloride of copper, boracic acid, nitrate of strontia, chlorides of calcium, barium, and sodium, were exhibited in illustration of this part of the subject. The author, in conclusion, stated his intention of continuing his experiments in the same direction, on account of the important influence which the observations must exercise on the discussion of various points connected with the mathematical theories of light.

4. One of the most original papers, and fully reported in the *Lit. Gaz.* No. 1484.

5. Another interesting communication, and fully reported last week.

SECTION C.—(Geology and Physical Geography.)

1. Pratt (S. P.) on the coal deposits of the Asturias.
2. Ramsay (A. C.) on the denudation of South Wales and the adjacent counties.
3. Dieffenbach (E.) on the geology of the island of New Zealand.

1. The deposits illustrated by Mr. Pratt lay along the coast from near Leon through Oviedo. The strata rise below the tertiary, and consist of alternations of grit and shale, and thin layers of limestone; and contain a good bed of coal, about 9 feet in thickness. Nearer Oviedo are many, about 70, seams and rich deposits of coal. Abundance of fossils, chiefly shells and corals, is found; and the author concluded, from the whole of his observations, that this part of Spain contained not only coal-beds corresponding with those of England and other countries, but others belonging to an elder period. Below this coal lay prodigious strata of hematite, the pure unmixed ore being 50 feet thick, and apparently an aqueous or mechanical deposit. An interesting conversation ensued on coal and hematite formations, in which Professors Sedgwick and Buckland, and Sir H. de la Beche, took a share: the latter remarked on the hematites in England generally occurring in veins and fissures, and on a deposit in Dean Forest resembling this in Spain, and accounted for by the analogy to great masses of impure carbonate of iron, "bog ore," still in the process of formation in most of our bogs.

2. Mr. Ramsay's paper entered particularly into the extensive denudations observable in the districts to which it referred, and endeavoured to fix the geological periods at which they occurred. The older rocks he held to be quiet deposits, as was evidenced by their conformable nature; but afterwards disturbed by violent convulsions, which curved and contorted all the strata from the coal-measures downward, and put an end to the conditions on which the further formation of coal depended. This terrible disturbance he attributed to an immense lateral pressure, such as would result from the attempt of a solid crust to accommodate itself to a diminishing mass below in a refrigerating sphere, and not from forces acting on detached

points. Mr. Ramsay then entered upon a calculation of the quondam heights of mountains in South Wales, from Cefn Cnib, in Monmouthshire, to the Severn, in two different lines, and assigned to them an elevation of at least 15,000 feet above the level of the sea, and a climate of every variety, from tropical heat to arctic cold. On this opinion he accounted for the fossil plants of the lias and oolites, and the insects mingling temperate with tropical types. The whole he attributed to the tertiary period, and immediately preceding our own present condition.

The broad questions involved in this able communication led to long discussion and some variety of opinion, upon which it is unnecessary for us to enter. Mr. Phillips observed, that Mr. Ramsay's data would equally apply to the Malvern hills, and to those of North Wales and Ireland.

3. Dr. Dieffenbach, whose work we recently reviewed, described the geological formation of New Zealand as resting throughout on clay-slate, containing green-stone dykes, roof-slate, &c. He stated the localities where boulders of trap, anthracite coal, limestone, volcanic conglomerate, active volcanoes, lakes apparently in ancient craters, vast extents of barren pumice-stone and gravel, quartzose sandstone, greywacke, mineral and hot springs, &c. exist; and, in conclusion, declared that the huge bird *mōa* had never been seen alive by any native of the country; its bones were found in rivers flowing between high banks, and it was probable they might be derived from tertiary fluviatile strata.

Dr. Buckland concluded, from the account given of it, that New Zealand was not destined to be an agricultural country.

SECTION D.—(Zoology and Botany.)

1. Carpenter (Dr.), report on the microscopic structure of shells.
2. Ball (R.) on peculiar sounds produced by some of the *Notonectidae*.
3. Ogilby (W.) on principles of classification.
4. Forbes (Prof. E.), report of the dredging committee.
5. Portlock (Captain) on the dredging at Corfu.
6. Alder and Hancock (Messrs.) on the genus *Dendrodoa*.
7. Trevelyan (W. C.) on the guano of the Faroe Islands.
8. Goadby (A.) on M. Fizeau's process of etching daguerreotype plates.

1. Dr. Carpenter's paper was substantially a repetition of that read in the Geological Section on Friday, and reported last week.

2. The peculiar sounds observed by Mr. Ball in the *N. affinis* were somewhat between the cricket and the landrail.

3. Mr. Ogilby pointed out the improvements which might be made in zoological classification by attending more minutely to the limbs and extremities of animals.

7. Mr. Trevelyan spoke of the guano of the Faroe Islands, chiefly derived from cormorants, as an abundant resource for that kind of manure, now that Ichaboo and Peru were so nearly exhausted. He asserted it to possess equally fertilising qualities.

8. The process of etching daguerreotype plates has been already described in our pages. We are glad, however, to quote the authority of Mr. Goadby on the progress of the art as applied to a branch of research in which he so greatly excels. He says: "The engravings produced of the nervous systems of *Aplysia* and *Tritonia*, the latter much magnified, and the nutritional organs *in situ* of a caterpillar,

By mislaying some of our memoranda, we are prevented from being exactly regular with a few minor papers, &c.—Ed. L. G.

sufficiently demonstrate the successful application of the daguerreotype to the purposes of natural history, the details being faithful and minute, and the texture of the several tissues represented to an extent that is truly wonderful."

SECTION E.—(Medical Science.)

1. Sibson (Mr.) on an apparatus for delineating external changes produced by disease of viscera.
2. Macdonald (Dr.) on the cranial vertebrae.

3. Brooke (Dr.) on the application of a sounding-board to instruments for detecting foreign bodies.

1. A very ingenious apparatus, consisting of a thin wire gauze in a frame, which being spread over the chest or any part of the human body affected by disease, enables the medical practitioner to trace its action, and discover the seat, nature, and progress of the malady. The exhibition of the instrument, and its application to a human subject, were much applauded by the section.

2. Dr. Macdonald's lecture displayed his original and characteristic views in a striking manner; demonstrating the back bone or central column in man to be a number of bones, which he denominated the *cautis centralis*.

3. Dr. Brooke exhibited very clever invention for applying a sounding-board to the discovery of foreign bodies by auscultation. It consisted of a small silver tube curved at one end, and the sounding-board at the other; and the experiments gone through by the doctor proved the power and beautiful application of the instrument to ascertain the nature of internal disorders.

SECTION F.—(Statistics.)

1. Fletcher (J.), a statistical account of the ancient system of public charities in London.
2. Boileau (Sir J.), contributions to the agricultural statistics of Norfolk.

3. Nield (W.), police statistics of Manchester.

1. Mr. Fletcher stated that the necessity of systematic provision for the relief of the poor began to be felt after the suppression of monasteries. In 1544 the site of St. Bartholomew was granted to the corporation of London, but no provision made for its endowment and government till 1548. Christ's Hospital, for the education of destitute children, was founded in 1553; and about the same time St. Thomas's Hospital, for the same purpose as that of St. Bartholomew. Vagrants abounding very much at this period, Bridewell was established by the charter of Edward VI, the government of these institutions was given to the corporation of London. He then explained the causes which placed these institutions in the hands of self-elect governors, between whom and the corporation a compromise was effected. He then detailed the various efforts that had been made to suppress mendicity by penal enactments, some of which were so severe as to vest an arbitrary power of transportation in any two governors of Bridewell. In 1708 the London workhouse was first brought into full operation; but it fell into inefficiency, and was finally abolished.

The chairman (Prof. Prysme) said, that too much importance had been attributed to the suppression of monasteries as a cause of pauperism. Before that time repeated acts of parliament had been passed complaining of the increase of vagrancy and mendicity. The great influx of the precious metals from America had lowered the value of money, and as there was no corresponding increase in the rate of wages, the condition of the labourer had been much deteriorated. This was further shown by the fact, that similar complaints of the increase of vagrancy and beggary were made in Spain and Belgium, where monasteries were not sup-

pressed, at the same time as in England, and a similar course of legislation adopted.

2. Sir John Boileau read an interesting paper on the agricultural statistics of Norfolk.

3. Mr. Nield, for the year 1844, gave an account of the number of convictions, robberies, fines, property lost by parties and found or restored, by the police; of the various classes of offenders—those of no trade preponderating; of the number of prostitutes, houses of ill-fame, lodging-houses, public-houses, beer-houses, &c. &c. This paper gave evidence of the vigilance, discretion, and efficacy of the Manchester police—their cost 57*l.* a-head each per annum on the average; their number 413; and the respect felt for them for their valuable services by the towns-people; Manchester being considerably improved by the force, the number of robberies being on the decrease, and a better state of things prevailing than before.

Sect. G.—(Mechanics.)

1. Booth (Mr.) on rectilinear and rotatory motion.

2. Greene (Dr.) on a paper by Mr. Nasmyth on pile-driving by the steam-hammer.

3. Fairbairn (W.), on experiments on railway gradients.

1. Mr. Booth exhibited a small instrument to illustrate his method of converting rectilinear into rotatory motion.

2. Dr. Greene repeated the description given at the York meeting, and read a letter from Mr. Nasmyth, giving an account of the successful operation of the machine (see *L. G.* No. 1447). In the first trial with a part of the machine at the manufactory, it drove a pile, 14 inches square and 18 feet in length, 15 feet into the ground with 20 blows of the monkey, the machine then working 70 strokes a minute; the ground was a coarse ground, embedded in a strong tenacious clay, performing this work in 17 seconds. The entire machine is now in full action at Devonport for the embankment to be erected there to keep out the sea and form an immense wet dock to contain the royal steam navy. He describes it as going far beyond what he had dared even to hope for, and that it is truly laughable to see it stick vast 60 feet piles into the ground as a lady would stick pins into her pincushion. The entire of the operations required to be performed on each pile, from the time it is floated alongside of the stage, until its embedded in the solid foundation of slate-rock, takes only 4½ minutes. The great stage which carries the machine, boiler, workmen, and every thing necessary, trots along on its railway like a wheelbarrow, and moves on the diameter of a pile the moment it has finished the last. It picks the pile up out of the water, hoists it high in the air, drops it into its exact place, then covers it with the great magic cap, which follows it as it sinks into the ground, then thump goes the monkey on its head, jumping away 75 jumps a minute. At the first stroke the pile sank 6 feet, its advance gradually diminishing until, in the hard ground above the solid slate-rock, it was reduced to 9 inches. Nothing can prove the superiority of the principle of Nasmyth's brilliant invention, of getting his momentum by a heavy weight moving with small velocity, over the same momentum as got on the old principle by a light weight moving with great velocity, than the state of the heads of the piles as driven by each process. A sketch was shewn of two heads of piles, one 56 feet long, driven by a monkey of 12 cwt. falling from a great height, and making only one blow in five minutes, and requiring 20 hours to drive it; this, though protected by a hoop of iron, is so split and shattered on the head that it would require to be reheaded to drive it any further. The other,

although 66 feet long, was not even supported by an iron hoop, and the head is as smooth as if it were dressed off with a new plane. It was driven with a hammer 50 hundred weight, and only 3 feet fall, making 75 blows a minute, and was put in its place and finished in 4½ minutes. In addition to other great advantages of driving by a heavy weight over that of driving by a light weight, is the immense saving of labour or whatever moving power is employed. Momentum being the product of weight multiplied by velocity, you may get the same momentum in various ways by varying both the factors; but where the velocity employed is that produced by the action of gravitation, the greater the velocity employed the greater is the loss of power.

Suppose, for example, we want a momentum of 16, a weight 8 with velocity 2 will give it; and let us suppose that velocity created by the weight falling from a height of 3 feet: we can get the same velocity by employing a weight of 4 and velocity 4; but to create that velocity by falling, the body must fall from a height of 12 feet, or four times the former height, the velocities being only as the square roots of the heights: now it is evident that it will require double the power to raise 4lbs. 12 feet high as to raise 8lbs. 3 feet high, so that there is a loss of one-half of the power employed in the latter case. This new and powerful agent I expect will produce great national results in the contemplated harbours of refuge which are to be formed along our coasts, and the recovery of vast tracts of land from the sea, and which it will now be as easy to effect as, before the operation of this new power, it would have been difficult and in many instances impossible. I shall only add, in conclusion, that the site of that great national work, the royal steam-dock at Devonport, was actually planned and laid out on the faith of the powers of the pile-driver, as inferred from those of its sister-machine, the patent steam-hammer, with whose wonderful performance the Admiralty had been previously acquainted, and which is also the invention of the same able individual, to whom not only his own country, but the most remote regions of the civilised world, are so deeply indebted.

Since this first communication was received, in consequence of the men becoming more familiar with the manner of working the machine, some of these huge piles have actually had all the operations attending their being raised from the raft and put in their places completed in two minutes, and few exceeding four minutes; so that taking the fair average at three minutes, that is at the rate of 200 per day of 10 working hours. The fall of the monkey and length of stroke of the piston being represented as only 3 feet, it must seem almost incomprehensible how it can drive a pile down 6 feet with one blow. To accomplish this, while the piston is descending through the cylinder, the cylinder is allowed to follow it by sliding between the same uprights. The cap also which rests on the shoulders of the pile, whose head passes through a hole in the cap to receive the blow, and which weighs, I believe, upwards of four tons, is, by its inertia, left a little behind the descending pile; but following it quickly in its course, it falls upon its shoulder, and thus a second impulse is given to the pile with each stroke of the machine.

3. The author stated that the object of his communication was simply a notice of experiments then in progress, to determine the power of adhesion of the locomotive engine in the first instance, and the force of traction necessary to work gradients in the second. After a brief statement of the progress made in the develop-

ment of different lines of communication, and the improvements effected in the locomotive engine, the paper went on to state the facilities with which even steep gradients were now surmounted by the enlarged powers of the engine, more particularly when compared with those in use at the commencement and subsequent extension of railway traffic. As near as we could collect, the subject was divided into the following heads, which may be denominated constants: 1. The resistance due to friction on the machinery or working parts of the engine; 2. The resistance of the engine considered as a carriage; 3. The resistance of the waggons, carriages, &c., composing a train; and lastly, the resistance of the air.

In treating of these separate heads, the writer instanced the experiments of the Comte de Pambour, Dr. Lardner, and Mr. Wood the engineer of the Liverpool and Manchester Railway. According to those authorities, the resistances were variously stated; first by Pambour, who makes the friction of the waggons and steam-engine, when considered as a carriage, equal to 5·76 lbs. per ton, and for the friction of the working parts of the engine, 7lbs. per ton. On this assumption, the resistance would be $5\cdot76 + 7 = 12\cdot76$, or about 13lbs. per ton for the sum of the friction due to the engine (considered as a carriage) on the one hand, and the whole of the organic parts taken collectively on the other.

As respects the resistance of the air, the author gave results from similar experiments; and having assumed a velocity of thirty-three miles an hour, he found a mean resistance of 2·92, or nearly 3lbs. on every square foot of surface exposed to the action of the air. Mr. Wood, in some recent experiments, makes the resistance on a calm day (at the same velocity) 1·89ths of the whole weight, which, compared with others, gives a total resistance (including friction) of 25lbs. per ton. This sum was considered a fair average of the experiments: and assuming 25lbs. as the maximum resistance to every ton of a railway-train, the author laid before the section a table of gradients, of which the following is an abstract:

Gradient.	Resistance in lbs. per ton.
1 in 30	137·00
1 " 40	84·99
1 " 60	62·33
1 " 80	53·33
1 " 100	47·46
1 " 120	43·06
1 " 140	40·71
1 " 160	39·00
1 " 180	37·43
1 " 200	36·20

From the above it would appear that the resistance follows a certain ratio, as the numbers 137, 81, 62, &c. &c.

In addition to the resistances, force of traction, &c., already described, the author briefly detailed several experiments made on the Hunts Bank incline with two locomotive engines belonging to the Manchester and Leeds Railway Company. Both engines had 14-inch cylinders, and 4-foot 8-inch driving-wheels. The first, with all the six wheels coupled, took a gross load of 82 tons 2 cwt. up a gradient of 1 in 60 for a distance of 1044 yards, and 1 in 46 for a distance of about 900 yards, and the whole distance of 2054 yards was accomplished in six minutes.

By the second engine, with only four wheels coupled, the same load was carried, and the same distance performed in 15 minutes and 30 seconds, being at the rate of nearly 12 miles an hour.

From these experiments, and others which are still in progress, it is inferred that a great saving may be effected in the first outlay and

construction of railways; and instead of spending large sums in tunnels, cuttings and embankments (in order to attain easy gradients), it will ensure much greater economy, and prove more conducive to the public interests (leaving out of the question the merits of the atmospheric principle), to increase the powers of the locomotive engine, and work gradients varying from 1 in 100 to 1 in 30.

MONDAY.

SECTION A.—(Mathematical and Physical Science.)

1. Lloyd (Rev. H.), remarks on the periodicity of magnetic disturbances.
2. Brewster (Sir D.) on a new polarity of light, with an examination of Mr. Airey's explanation of it on the undulatory theory.
3. Brewster (Sir D.) on two new properties of the retina.
4. Challis (Prof.) on the aberration of light.
5. Stokes (G. G.) on the aberration of light.
6. Thomson (W.) on the elementary laws of statical electricity.
7. Rossie (The Earl of) on the nebula 25 Herschel, or 61 Messier, as seen in his great telescope.
8. Brewster (Sir D.) on the heat of the solar spots, a communication from Professor Henry, of Primitive College of New Jersey.
9. Brewster (Sir D.) notice of fog-rings observed in America.
10. Hill (T. W.) on a practically useful system of numerical notation.

1. In regard to Kreil's, and Sabine's views of magnetic disturbances, two questions present themselves—whether the law of probability should be kept distinct, as dependent on the hour of the day or season of the year; and whether the excess of the disturbance should be separated from the mean; and if so, what would be the effect of the separation? Dr. Lloyd's object was to determine the law of probability. Leaving out the differences of individual observations, taking the mean of the disturbances from midday to midday, and projecting them in a curve, there appeared an increase of disturbance from six in the evening to about midnight, a decrease to six in the morning, and then almost a constant value during the day. The curve for direction, too, shewed almost a constant westerly deflection from four A.M. to six P.M., and an easterly one during the night. So that apparently there was distinct periodicity in the magnitude and direction of the disturbances; and the day and night results exhibited a remarkable relation in connexion with the presence or absence of the sun. The annual period as well as the diurnal period of mean disturbances also indicated a distinct relation between the disturbances and temperature, the numerical mean giving a minimum in winter and a maximum in summer. Thus, whether viewing the whole or part of the disturbances, they seem to possess a periodical character. Dr. Lloyd, however, thinks they are of two kinds—irregular, without period, and regular, or periodical; and that to determine or distinguish these two would be of extreme interest. Their separation would probably lead directly to explain their physical causes. The general result of Dr. Lloyd's valuable investigations is, that magnetic disturbances hitherto mysterious appear to be in part dependent on the calorific effects of the sun. Their reduction to any kind of law, as Sir J. Herschel observed, is a remarkable fact, and their division into classes a first great step to their elucidation.

2. Notwithstanding the great power, said Sir D. Brewster, of the undulatory theory of light, he did not consider that it represents the facts of physical optics. Not wholly abandoning Newton and Laplace, it has been his lot, he said, to make public numerous facts; and he would mention two classes which the

undulatory theory failed to explain. These were the phenomena of transverse fringes, which, he asserted, it was beyond the power of the undulatory theory to account for; and the new polarity, the subject of this notice. This latter group was observable on looking at a perfect solar spectrum through the edge of a plate of glass or quartz or mica, covering one half of the eye. If the eye were half covered on the violet side of the spectrum, black bands were seen; but if the half on the red side were covered, no bands or traces of bands are seen; if the plate be thin, fringes are seen, but only on one side, and hence apparently is exhibited a new polarity. These phenomena, first brought forward by Sir D. B. in 1837, though pressed upon the attention of the undulatory theorists, were not attempted to be explained for three years; but in 1840 they were taken up by Prof. Airey and Prof. Powell, and had been made the subject of two elaborate papers by the former. These were read in extract by Sir D. Brewster; and their insufficiency, according to his views, to explain the phenomena, commented upon. Especial attention was directed to two points in the second paper: 1st, the assumption therein, necessary for the explanation—a diffused image round a pencil of homogeneous light; and 2d, the expression for the interval—inversely as the area of the pupil. In regard to the first, Sir D. Brewster said that it was untenable, that there was no such physical effect, and that the assumption was only a process of getting over the difficulty; and to the second, that the interval in the bands exhibited no such relation, and that the fringes do not vary with the diameter of the retina or of the aperture of the object-glass. The phenomena, a true class of interferences, Sir David repeated, were yet unexplained.

The discussion that ensued was participated in by Profs. Airey, Powell, and Challis; but the subject is more suitable for closet-examination and study than verbal argument or popular account. Prof. Airey had been taken by surprise; he had not recently been occupied with the question; he had forgotten the algebraic expressions, but he had no doubt of the diffusion of a pencil of light on the retina. He was fully satisfied, however, of the powers of the undulatory theory to explain these and all other phenomena, transverse fringes, &c. Professor Powell's impression was, that the results brought forward by Sir David Brewster were not single, but a complication of phenomena. Prof. Airey's memoirs, he thought, perfectly explained the phenomena described in them, but it does not follow that all the phenomena were therein expressed. Sir David still dissenting *in toto*, denied complexity, as well as that any part of the phenomena had been explained by Prof. Airey.

3. The first property described by Sir David Brewster had relation to the foramen of the retina—a small hole directly in front, looking at an object, and entirely deprived of nervous matter. When the eyes were first opened in the morning, this property was observed, viz. a shaded spot on a white ground changing gradually into light. This effect can be reproduced after closing the eyes for a quarter of an hour. The second property was seen only when travelling at great velocity. Looking out of a railway-carriage, the white objects presented themselves in rows of parallel lines; but on shutting the eyes, oscillations are seen in the reverse direction; and when very brilliant, blue lines transverse, the direction of the white lines are seen.

Prof. Dove mentioned, as bearing on these

questions, a phenomenon observed at Stockholm. If two lines in line, with the space between them covered, be looked at, and the covering taken off the part that divides them, a continuous line is seen.

4. Prof. Challis in his verbal communication assumed the direction of vision to be determined by the direction of the propagation of the waves; and applying this to determining the relative position of a star and of the wire of a telescope, drew, as a first consequence, that the star being at rest in reference to the earth, and the waves propagated rectilinearly, the star was seen in its proper place; and as a second, that the wire, partaking of the motion of the spectator, was not seen in its proper place, but behind its true place, proportionate to the relative velocities of the spectator and of light. If it be assumed that the wire is seen in its true place, then it must be inferred that the star is seen in advance; but Prof. Challis considers that the phenomenon is explained much more simply by the wire being out of place. This subject, "aberration of light," is the object of a paper by Prof. Challis on the undulatory theory.

5. Mr. Stokes gave briefly a verbal abstract of his mathematical discussions of the same subject, which will shortly be published.

6. Of late years some eminent experimentalists, and especially Snow Harris and Faraday, have begun to doubt, to a certain extent, the truth of Coulomb's laws, and have entered upon the investigation of various phenomena which appeared to be incompatible with them. The principal subject of this paper is an attempt to shew that almost all the results adduced in their memoirs which refer to electricity in equilibrium are necessary consequences of the mathematical theory, and that none are at variance with it. In the first part of the paper a number of laws of a very simple nature, arrived at by Snow Harris, are shown to be approximate results of Coulomb's theory. There is, however, one part of Mr. Harris's investigations—that which refers to the "striking distance," or to the insulating power of the atmosphere—which, though it does not bear directly upon the laws of statical electricity, is yet of great importance in enabling us to fix upon an absolute standard of electrical density or intensity. The result which Mr. Harris arrives at is, that the intensity necessary to produce a spark depends solely upon the density of the air, being otherwise independent of the pressure and temperature. In the second part of the paper, Faraday's researches on electrical induction are considered; and it is attempted to shew that the theory there developed is one of two elementary methods of viewing the phenomena of statical electricity, or, in fact, generally of attraction, varying inversely as the square of the distance. Either of these views—one of which has presented itself to Coulomb, and the other to Faraday—may be made the foundation of the present mathematical theory; and therefore, as far as this is concerned, they may be adopted indifferently. It must be admitted, however, that, for simplicity of conception, the elementary laws of Coulomb have great advantage; and from them, by very simple analysis given first by Green, we arrive at the elementary laws of Faraday as theorems. Faraday's memoir also contains the account of an investigation which brings to light a very remarkable electrical action, which he terms that of dielectrics, hitherto entirely unknown (if we except the observation of Nicholson, that the dissimulating power of a Leyden jar depends on the kind of glass of which it

is made, as well as on the thickness). In the present paper a short account of the results of these results of Faraday is given, and their relation with the general theory explained. The laws of the dielectric action have not yet been fully determined by experiment; but it seems probable that it may be perfectly assimilated to that of soft iron when under the influence of magnetic bodies. An extensive and rigorous series of experiments and measurements would, however, be required to establish this or any other hypothesis on the subject; but still the idea might be adopted to indicate the nature of the experiments from which it would receive its most decided test. There are, besides, some remarkable questions relative to the physical state of dielectrics, which present themselves as objects for experimental inquiry. Thus it may be conceived that a dielectric in motion might present properties analogous to those discovered by Airey in magnetism, and exhibited in his experiment of the revolving disc. As, however, a very distinct element—that of electrical currents—enters in the latter case, in a way which could probably have no analogy in the former, it could hardly be expected that any remarkable agreement should be found to exist. Another question, which can only be decided by experiment, is, whether a transparent dielectric in a highly polarised state affects light transmitted in the same manner as a uniaxial crystal. All analogy would certainly lead us at least to look for such an action in a plate of glass of which the particles are kept in a constrained state by means of opposite electrical charges on the two faces, especially when we consider that the constraint may be elevated to such an extent as to make the substance be on the point of cracking. In concluding the abstract, Mr. Thomson called attention to another object of experimental research. All the measurements of Coulomb have been made solely for the purpose of comparing electrical forces with one another; but to complete the theory, we should have the means of comparing electrical forces with weights, to which every other kind of force is ultimately referred. For this purpose a standard intensity must be chosen, and the diminution of atmospheric pressure at a point of a conducting surface possessing this intensity, either determined by direct measurement, or deduced from experiments in which the repulsion between bodies charged to a given intensity is measured by weights. The standard intensity is furnished by the result of Mr. Harris, mentioned above; and might be taken as the intensity immediately before a spark, in a given state of the atmosphere. The series of experiments necessary to complete the investigation would be of an extremely delicate nature, and might be long and laborious; but if the results were arrived at, and if the laws of actions of dielectrics were thoroughly known, the experimental elements of the theory would be complete.

7. Sir David Brewster exhibited a drawing of the nebula No. 51 of Messier's catalogue, and of Sir John Herschel's, as seen by Lord Rosse's six-feet telescope. This same nebula had been observed and drawn by both Sir William and Sir John Herschel; and the differences were extremely great. The former had seen it as a single nucleus, with a large halo; the latter, besides this and the general nebulosity, had noticed a portion of a second circle: but by the powers of Lord Rosse's large telescope the greatest part of the nebulosity is resolved into thousands of stars, thrown off, as it were, from central masses in two spiral

ral curves, one of them apparently proceeding from an outer nucleus, distinctly seen, and connected in one general nebulae.

Lord Rosse explained, that the drawing exhibited was not only a working *mémo*randum, but a faithful representation of the appearances which he had been desirous that Sir J. Herschel should see.

Sir John Herschel said, that he beheld with perfect astonishment the new aspect of an old friend. An account of this nebula had been given first by Messier, and next by his father. He himself had observed it, and suggested the possibility of the nebulous rings being all stars, like the milky way; he had also, we believe, observed an outer nucleus. But he said, now it is quite a new thing—two connected systems, not with connecting circles, but spirals; a phenomenon for which he was perfectly unprepared. It exhibited now a world of particulars, and an extremely curious connexion with the outer nebula. As to the general spiral form, it bore an analogy to the nebula of Orion; but it comes out with a degree of impressiveness quite astounding.

8. Was a mere notice in a private letter to Sir David Brewster of a series of experiments with a thermo-electric apparatus, one result of which was to shew that the spots were colder than the other surface of the sun. Professor Henry's thermopile, placed in the telescope for these observations, was so delicate, that the heat of the smallest cloud or of a house was perceptible—the heat of a house four or five miles off readily affected the instrument.

Sir J. Herschel remarked, that the spots on the sun should be colder might be expected, but the delicacy of the means said to have detected it must be great. He asked whether any trial has ever been made to project the sun's disc on the incandescent ball of Drummond's light. He had suggested this to test the intensity of the sun's heat. At Turin a thermometer had been so arranged that the distant Alps had affected it. But no instrument, however delicate, had as yet been acted upon by heat from the moon. We doubtless ought, he said, to get heat from the moon; but perhaps, like culinary heat, different from solar, or changed so as not to be able to pass through the gaseous matter of our atmosphere.

9. The subject of this notice was a milk-white fog observed in 1898; but still not an uncommon occurrence in America. The vessel in which was the observer and correspondent of Sir D. Brewster was compelled, by the density of the fog, to bring up. After some time, it was remarked that it would soon now be all clear, as the fog-eater was come. This was pointed out to be a ring of thicker fog with an internal ring of prismatic colours. This peculiarity lasted about twenty minutes, and then the fog entirely cleared away: the next day was a severe frost. The idea of an ice-bow, or prismatic halo, Sir David said, naturally occurs for explanation.

10. No verbal description within our limits could convey a knowledge of the "useful system of numerical notation."

LITERARY AND LEARNED.

ROYAL SOCIETY OF LITERATURE

May 22d.—Mr. H. Hallam, president, in the chair. Mr. W. R. Hamilton read a further portion of Mr. G. Burges's remarks on *laconic* in ancient authors, two portions of which relating to Thucydides, have already been reported as read at previous meetings. The present paper was chiefly occupied with the words

of the same great classic, presenting restorations of several defective passages, the aptness and ingenuity of which were undeniable. Perhaps, however, a more interesting emendation was one given by Mr. Burges in a supplement to a passage in the *Medea* of Euripides. At the close of the speech where the messenger details the death of Creon and his daughter, the Greek is at present—

καί ταῦτα δὲ γενοῦται τοῖς τε καὶ γέγονησι πατήσεις τίθεται τοποθετούμενη συντελεστή.

The editors have suspected some corruption here; but have not perceived, said Mr. Burgess, that Euripides wrote—

at Euripides wrote—

The change of πέντα ποθεῖσα into γέλας πυθομένη, the writer stated, had been suggested by himself many years since; but he did not then perceive, what he afterwards discovered, that in the words of the scholiast—οὐδὲ τις ἤδη ποθεῖσε δακρύσαι λείψοντας τῷ θεατᾷ—there lay hid, θεάμενος πόλλα λείψοντα, while from the distich οἴτων ἔφησαν, κ. τ. λ. in the drama under the title of Χριστὸς πάσχον (v. 1107) it is easy to elicit the lost line of Euninides—

June 12th.—The president in the chair. The secretary read a memoir "On a Greek inscription discovered at the baths and on the temple of Segesta," by Mr. J. Hogg. The inscription, as seen by Mr. Hogg, consists of two lines, and

reads,
AESTHPIA
IAEXAPIN

At the commencement of each of which lines a former transcript gives what appears to have been a portion of another letter. The inscription was found near the remains of baths belonging to the thermae or hot springs on the supposed site of the ancient *Aqua Segestane*, distant a few miles south-west of Alcamo, in the Valle di Trapani.

Having noticed some previous attempts to explain this monument by D. Di Blasi in 1736, which do not appear satisfactory, Mr. Hogg proceeded to state that, following his own transcript, he had been at first inclined to interpret it either, 1st, *Aστεριδίας χάριν*, "for the sake of Asoteridia;" or 2dly, *σωματίας χάριν*, "on account of his own ill health." A second translation which occurred to him was, "of his own sickness or ill health," on the supposition that some invalid had dedicated it as a votive tablet, after he had received a cure at the baths of Segesta. Both of these explanations he, for reasons rendered at large, abandoned as untenable; and adopting the form of the inscription as previously published by D. Blasi, and again by the Prince of Torremuzza in the last century, he regarded the stone as a fragment broken off at the beginning, and consequently the inscription itself as imperfect. He now proposed to restore the inscription as

AINEIALEOTHEPIA

"**ΩΙΟΝΑΙΑΣ ΠΙΝ** *bivalve sea shells*
"To Eneas, the saviour, for the sake of Dositheia."

The statement of the grounds on which this restoration rests, as assigned in detail by Mr. Hogg, occupied the remainder of his very ingenious and scholar-like communication. He proved the following facts: that Segesta, on the site of the baths of which place the stone was discovered, was founded by Eneas; and that the magnificent Doric temple, standing on what is now a barren hill, marks the position of the

town, and was actually dedicated to Eneas. The extremely ancient and venerable appearance of the present temple, and the want of flutings in its pillars (in which respect it is unique amongst the temples of Sicily), were noticed as circumstances that, in addition to the mass of direct historical evidence collected by the writer, had induced him to consider this edifice as the one which was erected to Eneas. He next answered an objection which might possibly be raised, that Eneas ought not to be accounted a deity, by shewing that that celebrated person was not only a founder of cities, but also hero, a demi-god, being the son of Venus, and in reality the very Σωτήρ, or Saviour, of the Trojan race. In conclusion, he referred to the circumstance that the Segestan inscription is worthy of peculiar attention on account of the remarkable form it presents of the P, which is square; a form of such very rare occurrence, that no other example of it would appear to exist on the monuments of Sicily, and only two are known to have been met with elsewhere.

ROTAL ASIATIC SOCIETY.

June 21st.—Sir G. T. Staunton, Bart., in the chair. Mr. Albermarle Bettington, of the Bombay Civil Service, read an interesting paper on certain fossils procured by himself on the island of Perim, in the Gulf of Cambay; more particularly, on a gigantic ruminant, having some affinities to the sivatherium and to the giraffe. After advertizing to former notices of fossils obtained on this island, the writer described its situation in the midst of the gulf-stream of Cambay, which separates it from the mainland, and deposits large quantities of alluvium brought down by the rivers emptying themselves into it. These rivers in the present day, in the freshes, transport into the gulf large trees, and the bodies of oxen, deer, bears, and other animals; and, in the great floods of past ages, are considered to have brought down and deposited, as now discovered, the remains of ruminants and pachydermata, some extinct and unheard-of, others having in the present day their cogeners in the Indian rivers; the whole, from the facts to be established from this heterogenous collection, being of considerable interest. The bed from which the writer obtained the fossil specimens exhibited to the meeting is below the usual water-mark, and is inaccessible except at the ebb of neap-tides. A portion only of those obtained were brought to England, the remainder were left in India. The most remarkable of those in this country was the large skull on the table, which is now, by competent judges, pronounced to be the first specimen of a new genus. The mass of conglomerate which contained it weighed about 170 lbs.: and the separation of the skull from near 100 lbs. of matrix occupied Mr. Bettington many weeks. The skull, on the whole, is exceedingly well preserved, though a portion has suffered from the action of water. The lines of teeth on the two sides of the palate are unconformable; and it has been conjectured that the head must, at this part, have suffered from violence; but there is no appearance of fracture in any portion. For the purposes of comparison, Mr. Bettington had made a close measurement of every part of the Perim fossil, of the sivatherium, and of the skull of the adult giraffe in the British Museum; from all which it appeared that the Perim fossil is the smaller. The teeth are similar in number and character to those of the sivatherium; and are somewhat smaller, as the comparative size of the heads would lead us to expect. A marked distinc-

tion between the two is found in the great excess in width of the cranium at the vertex, being in the sivatherium twenty-two inches, and in the Perim fossil very little more than eleven inches, in which character the latter approaches nearer to the giraffe. But the greatest point of difference is in the form and position of the horns. In the sivatherium the horns bear somewhat the same relation to each other as in the four-horned antelope; whereas in the fossil under consideration the anterior horns rise from a confluent base measuring twenty-five inches; the horns above the line of division measuring eighteen inches. This formation the writer considers to be without precedent in the animal kingdom, fossil or recent. The general character, cancellar structure, and extensive development of the protuberance at the lower edge of the transverse ridge of the occiput, compel the conviction that it was a posterior horn reflected, as in the common Indian buffalo, and must have produced an appearance truly monstrous. The whole formation indicates great force and power.

Among the fossils on the table, there were some identical with those of the Sevalic Hills, and others peculiar as yet to Perim. Among the latter was a new crocodilean. There were specimens of three species of mastodon, garials, and rhinoceros; and the heads, horns, and teeth of stags, antelopes, oxen, &c. &c. The writer concluded with the observation, that there was still a rich field of research remaining at this interesting deposit; and that he had sent to India, not only for some of the specimens before referred to, but also making arrangements for prosecuting further search. The subject is one to which he purposed devoting his best attention; and he would have great satisfaction in acquainting the society with the results.

Dr. Mantell, who was present at the meeting by invitation, remarked that the specimens before the society afforded additional confirmation of the interesting fact first pointed out by Capt. Cautley and Dr. Falconer, that in the tertiary formations of India were collocated the remains of several recent species of reptiles and of mammalia, with those of extinct species and genera belonging to the most ancient European deposits of the same geological group (the eocene); as, for example, the teeth and bones of the chiropterus, and other pachyderms of the Paris basin, with those of the existing gariol of India.

Dr. Mantell then offered some observations on the analogy which these specimens from the Island of Perim, collected by Mr. Bettington, as well as those from Ava and the Sevalic Hills, presented, in the mineralogical condition and the mechanical action to which they had been subjected, with those more ancient fossil bones and teeth that abound in the Wealden deposits of the south-east of England; particularly with those obtained from the conglomerates and grits of Tilgate Forest. The Indian and the British fossils are alike mineralised by iron, and have an investment of indurated ferruginous sand, interspersed with quartz, pebbles, and rolled fragments of other rocks; and the bones are for the most part mutilated and much water-worn; proving that, previous to their mineralisation, they had been exposed to abrasion from streams and rivers, and were transported from a great distance by currents. Dr. Mantell dwelt on the remarkable discrepancy between the faunas of the two epochs, although that of the Wealden was as decidedly of a tropical character as that of the tertiary strata of India: but in the latter large mam-

alia prevailed; while in the far more ancient secondary formation of England, mammalia were absent, and the place of the gigantic ruminants and pachyderms was occupied by herbivorous reptiles of appalling magnitude.

The thanks of the meeting were voted to Dr. Mantell for these communications; and the meetings of the society were adjourned till November.

FINE ARTS.

Royal Academy: the President.—We are sorry to hear the report that Sir M. A. Shee has adhered to his resolution to resign the president's chair of the Royal Academy (see *L. G.* No. 1484); and it is added, that his successor will either be Sir R. Westmacott or Mr. Eastlake. We have heard of no other name.

FRESCO EXHIBITION.

In our last *Gazette* we went over the six commissioned cartoons; and we have now to continue our remarks on the three to which prizes of 200*l.* each have been awarded, viz. the productions of Mr. E. Armitage, Mr. J. N. Paton, jun., and Mr. John Tenniel, jun.

The first of these in nominal alphabetic order is No. 46, "The Spirit of Religion," by Mr. Armitage, to which, with all its merits, we do not think we could have adjudged the superiority assigned to it by the Fine Arts' Commission. It imitates too closely the performances of the French Blondell; and the figure of Religion revealing herself to mankind (with the commonplaces of the Clouds of Error receding before the Star of Truth) is defective in power and dignity. The head of the dying man on the left is literally painful; and in that group is a third hand, apparently to let, in the cartoon, though in the coloured sketch it is possible to appropriate it to a body. Faith, Hope, and Charity, are delineated with talent and effect; but, we repeat, this performance is not a leading favourite in our sight.

No. 11. The same subject, treated by Mr. Paton, as we are told, a very young Scottish artist, nearly or just of age. Were he ten years older, this work would redound to his honour; for he has boldly grappled with his task, and filled his paper with a spirited and inventive representation. The human soul, typified as a struggling warrior guided by religious influence, is fighting the good fight with a Bunyan-like intensity, and is conquering the besetting perils of the world, the flesh, and the devil, all personified in a vigorous and original style. Fame, Pleasure, and other seductions, are also allegorised and engaged in striking action. No where has the artist shrunk from the question, but, if anything, has rather overdone and crowded his conceptions, than fallen short of illustration. On the whole, and in spite of certain defects in execution and the formal winged angels above, like rows of birds, we deem this to be, not only a work of great promise, but one of performance, which is most laudable and deserving of the place it has achieved.

No. 85, by Mr. Tenniel, also, we believe, a very young candidate, is an "Allegory of Justice," the cartoon in outline, and the design better understood from the coloured sketch. It is a fine composition, and expresses the subject forcibly. Justice is protecting on one hand, and punishing on the other; and the various forms and expression of those who are pleading for mercy, or cowering under the awful consciousness and heavy responsibility of guilt, are executed with great feeling and truth.

Most of the attitudes are admirably studied, the countenances animated with indications appropriate to the several conditions of the parties, and the whole combined in an artistical manner. It is another production of more than promise.

Proceeding in our examination of the unsuccessful competitors, we find in several instances so much to praise, that we cannot help regretting their lot. Thus—

No. 52. "The abstract Personification of Religion," by Charles Lucy, is, in our judgment, the finest and most impressive realisation of that idea in the whole hall. There is great sublimity in it, tempered with great sweetness, and loveliness and heavenly grace. The whole design, too, is extremely simple, this central figure being supported by her three immortal attributes, Faith, Hope, and Charity. These are ably cast in their general features; but will the artist forgive us for going so low in our criticism as to object to the ugly toenails, and other defects in the limbs, which detract somewhat from the decided beauties of his conception and skill in the management of what he has so nobly invented? We think he ought to have had a prize.

At the top of the Hall, and in the centre, is conspicuous a "St. George, the Champion of England against all Comers," E. H. Corbould. It is a gallant exploit, but all in such a flutter that we know not where all the feathers come from, or whether they are flying. We perceive, however, that a perverse wind blows them one way, and the tail of St. George's courser another. In short, we fear that this is rather a grotesque impersonation of romance, displaying more dashing talent than sound discretion.

No. 114. "Justice," cartoon, &c., by William Johnston, is a curiosity. The arbiter is bestowing laurel crowns on literary and artistic merit, protecting the widow and fatherless, and punishing their oppressors, Fraud and Chicanery. In the middle, Violence, the persecutor of Innocence, is arrested. The entire scene is as like a masquerade as ever law or justice in their vagaries and disguises performed for the diversion of mankind.

No. 29. "Prince Henry and Chief-Judge Gascoigne," by R. W. Buss, is a cartoon of considerable merit; and we can bestow the same eulogy on the "Baptism of Ethelbert in the river Glen" (No. 32), by Joseph Severn. He has adhered to the form of the rite according to the historical account, which has not been done by others who have occupied themselves with this subject. We purpose to devote another paper to this branch of the exhibition, throughout the whole series, where it is concerned.

No. 20. "Chivalry," &c., James and George Foggo. With powers apt to run into exaggeration, this Adelphi in art have here produced a striking design. There is a high grappling with difficulties, and some bold anatomical displays and foreshortening; but we cannot feel satisfied with the distorted eyeballs and contorted limbs of the violent Passions.

Panorama of Athens.—On Wednesday there was a private view of this highly interesting panorama, in the lesser circle, Leicester Square, which is nearly 35 feet in diameter, whilst that of Naples in the upper circle is about 54 feet, and Nanking in the large circle above 70 feet. But what it may want in extent is compensated in beauty and novelty; for it is near 30 years ago since a view of Athens was exhibited at the old panorama locality in the Strand. The sketches for the present picture were made by

Mr. Knowles, who has also superintended the painting by Mr. R. Burford, assisted by Mr. Selous. The point from which it is taken is the Hill of Museus, near the monument of Philopappus, and thus the artist has been enabled to present to the spectator the whole of the grand amphitheatre on which the city of Minerva stands, crowning the central height, and covered with the glorious remains of antiquity. The near monument of Philopappus is consequently a prominent object, from which the eye ranges to the Temple of Erechtheus, the Parthenon, the Odeum of Herodes Atticus, the Temple of Jupiter Olympius, the Temple of Victory, and all the more distant mountains rendered memorable and illustrious in classic story. There is every thing to excite the imagination and fill the mind in this delightful panorama, which affords a perfect idea of Athens as it is now seen, and of the circumjacent country. It is enlivened with groups in their national costume, and is altogether as rich a treat as Mr. Burford, with all his taste and talent, has ever produced for the public gratification.

Hindostan. Part I. 4to. Fisher, Son, and Co.

This is the first part of a companion-work to the very popular *China, its Scenery, &c.*, by the same publishers, and which has frequently, in its course, demanded our hearty praise. The *Hindostan*, to judge by this sample, is well calculated to succeed and rival that publication. The descriptions are by the lamented Emma Roberts, and possess the freshness of her feeling and the intelligence of her talent. From the Red Sea to the Himalaya chain, as the title-page states, the range of landscape, temples, and tombs, is embraced; and when we name such artists as Turner, Stanfield, Prout, Cattermole, Roberts, Allom, &c., who have made the drawings from original sketches by Commander Robt. Elliot, R.N., and Lieut. G. F. White, we have intimated enough to teach the public what to expect from the engravings. The marvellously low price at which they are sold will be another great recommendation; but without their being seen, we can hardly expect to be believed when we mention that four beautiful and finished productions of this kind are at the cost of only sixpence a piece!

France Illustrated. Drawings by T. Allom, Esq.; Descriptions by the Rev. G. N. Wright, M.A. 4to. Divisions 1 and 2. Fisher, Son, and Co.

As the preceding is a monthly, so is this a quarterly, publication, and one profusely enriched with all that is picturesque in kind throughout *la belle France*. Cathedrals, churches, exteriors, interiors, palaces, parks, bridges, towns, rivers, mountain-scenery, ancient gates and temples, all executed in Mr. Allom's best style, illustrate almost every second page, and are altogether a charming display of the architectural, antiquarian, and natural treasures of the country. The historical résumé and descriptive accounts are written with Mr. Wright's well-known care and precision: and well does the design merit encouragement, not only in France, for its subjects, and in England for its artistic excellence, but throughout the other states of Europe and America for its union of these universally appreciated qualities.

SKETCHES OF SOCIETY.

MEMORIAL TO MR. J. BRITTON.

On Monday, in connexion with this design, a dinner of Mr. Britton's friends and the admirers of his literary labours, during a long

life, and which raised him from a humble condition to the esteem and respect he now enjoys in his old age (7½ years completed), took place at Richmond, and was attended by about a hundred gentlemen, the majority of them well known to the public in various walks of literature and the arts. Mr. Wyse was to have presided, but was detained by parliamentary business; and the chair was taken by Mr. Gould, near whom sat Mr. Britton, the Dean of Hereford, Mr. Ingram the Anglo-Saxon antiquary, Mr. Tite the architect, Mr. David Roberts, Mr. B. Nichol of the *Gentleman's Magazine*, Mr. Rainy the eminent auctioneer,* and around in various places Mr. W. Tooke, Mr. Brayley, Capt. W. H. Smyth, R.N., Lieut. W. S. Stratford, Mr. S. C. Hall, Mr. Thomas Brown of Messrs. Longman's house, and many others of similar station in society, and all desirous of paying this tribute of regard to their veteran contemporary. Not expecting so numerous a gathering, preparations were made for only two-thirds of the company, and some inconveniences were consequently experienced in frequent prolongations of the two horse-shoe ends of the table, not to mention the shifting of dishes provided for the more limited demand. Still matters went off very well; and but for the earlier speakers toasts forgetting that, at twelve or fourteen miles distance from home, the hours of guests are necessarily curtailed for the enjoyment of oratory, the entertainment would have been more agreeable in itself, and more applicable to the object in view. As it was, the party began to break up before half the toasts were given: and we fear the house might almost have been counted out or dispersed by a Brotherton motion before they came to a conclusion. This was certainly to be regretted; and we are bound to record it as a warning to other gentlemen who occupy the floor first after extra-mural festivals, to consider that "brevity is the soul of wit."

When Mr. Britton's health was drank he returned thanks in a feeling manner, and, taking a brief retrospect of his career, earnestly enforced the lesson of industry and perseverance as the surest means of raising an individual in this country to independence and consideration. Whilst he was speaking, we noticed a link-boy lighting the lamps on the picturesque bridge of Richmond, casting the beautiful scenery around into a bright and glowing landscape, and enabling the passing multitude to guide their steps aright; and we could not help fancying, at the moment, how curious an analogy it held to his beginning course (and the course of all those which have resembled his), climbing the ladder of young ambition, and throwing out the light which should adorn a darkling world and serve to assist their fellow-creatures on their way through the devious paths of human existence.

Of the other addressees we shall say nothing, but conclude with noticing that some of them bore grateful testimony to the merits of Mr. Britton: they partly diverged into extraneous matter; and therefore we might remark [*si monumentum quarris, circumspicere*], the living Monument around him was the best organ in expressing the sentiment of the meeting; and

* On the following day Mr. Rainy delivered a public discourse in his own auction-room (which was attended by about sixty or seventy persons) on the abuses which prevailed in the transfer of property, in consequence of collusions between attorneys and auctioneers, and the division of premiums, to the cost of vendors. To use a vulgarism, Mr. R. pitched it into the system pretty generally, and into individuals so strongly that we presume much more will be heard of this unique lecture.—*Ed. L. G.*

being infinitely preferable to one of marble or bronze, we only express the hearty wish of all who were present in hoping he may long enjoy the honours his useful, meritorious, and exemplary life has so justly earned for him.

SELTZER WATER.

We last week briefly alluded to an improvement in the importation of this agreeable and wholesome beverage, respecting which a very eminent physician has declared, that no one who drank it daily would ever be troubled with gout, or several other of the most prevalent painful diseases which make invalids of so many luxurious-living Englishmen. On this we cannot pronounce; but with the old trite adage of "taste and try before ye buy," put in practice since Saturday, we can say that this water is most refreshing and delicious, either *per se* or dashed with a little wine or spirits. To Mr. Betts' Metallic Capsule is due this praise; for it not only ensures the pure and genuine supply from the springs, and hermetically seals the bottles so as to preserve the fluid in all its original briskness and flavour, but it renders unnecessary and prevents the piercing and tampering with the corks, heretofore so usual at custom-houses (in order to ascertain that no different article was smuggled in), and which generally spoilt, by the admission of air, one vessel in every three imported. Now there is no vapid drink to disappoint us; every drop may be depended upon in its native lightness and healthy brilliancy. And we ought to note, that this assurance depends entirely on the capsule and agreement respecting it between the patentee and the Duke of Nassau; for bottles that have been used are greedily bought up and employed in a deceptive traffic, so that there is no security in them. Neither has any analysis yet sufficed to enable chemists to produce artificial Seltzer water, possessing the properties of the natural spring. On the contrary, they have been stated, on the high authority of M. Caventou, to produce very often opposite and injurious effects on the constitution; whereas the real element is efficaciously curative in the majority of disorders affecting the liver and the chest. It is this medical importance, more than the agreeable nature of the waters, which induces us to offer these observations to our readers, and cordially to recommend the matter to their attention. For further information they may consult the "Short Essay" (pp. 19, published by H. Baillière), which details the properties of the copious "Nieder-Selters" flow, and quotes the opinions of many celebrated writers respecting it. For ourselves, we shall only say "Ditto to Mr. Burke," and record our personal experience of the very grateful and beneficial qualities of the *Capsuled Seltzer*.

VARIETIES.

Lyceum.—An attempt has been made to dramatise Mrs. Caudle's lectures at this theatre, but the subject is utterly impracticable for the stage; and but for the humour and quaintness of Keeley, the failure here would have been as complete as at the Princess's. As it was, it was failure enough.

Knight's Weekly Volume.—The last two Nos. we have received contain Lord Brougham's "Historical Sketches of the Statesmen who flourished in the Time of George III."—a most welcome diffusion of that instructive work, thus brought within the means of the humblest class of readers.

Fine-Art Sales.—Above a hundred pictures from the collection of Mr. E. W. Lake have this week been on view at Messrs. Christie's;

and one moiety will have changed hands before this sheet appears. But we may mention to such of our readers as feel an interest in such matters, that they may still (*i.e.* to-day) see some interesting works as they are dispersed into new quarters. Among these we would point their notice to "An Officer," by F. Bol (No. 69), not unworthy of pairing with the famous "Cook" of Rembrandt, to match which it was hung up on Messrs. Christie's walls. Some fair Greuzes also deserve of attention; a remarkable "Ram and two Sheep," as a specimen of Van Strij; "The great Square of St. Mark," a fine Canaletti, especially in the sky melting behind the buildings on the right; 114, "An approaching Storm," a capital Lud. Backhuysen, the tempestuous clouds of the highest order; "The Blacksmith's Yard," by Gabriel Metzu, a masterly work; "Five Boors at a Window," a small but perfect piece of colour by Ad. Ostade; a surpassing "Peacock," &c. by Houdikoepter; "The Alpine Pass" (123), an admirable example of N. Berghem; and other little gems, chiefly of the Flemish school, which well illustrate many of the famous artists who have adorned it; including Teniers, Jan Steen, Van de Velde, and others, besides those whose peculiarly striking productions we have named above.

Spitalfields School of Design.—The prizes to the successful candidates in this useful school were distributed at Crosby Hall, on Wednesday, by Lord Robert Grosvenor. They ranged between £1. and £1., in money, and books were also adjudged to the meritorious pupils. The condition of the school and its 200 students was declared to be satisfactory: the whole revenue of the year £281., of which the pupils themselves had subscribed £21., and the council of Somerset House £354. It will be learnt with some surprise that the silk-trade, so much interested in the progress of such an institution, have contributed very little to its support.

Salamanders.—In the discussion upon the agency of land-snails in making holes in compact limestone, Dr. Buckland mentioned instances of scepticism in similar matters, which had been converted into belief. Thus the existence of salamanders had been denied; but there were five species ascertained in England, and Siebold described a species in Japan as large as a man. Two new species were being brought to Europe: but the male ate his wife up in the tub on their voyage home. In the way of facetie, Dr. B. mentioned that they made *oyster patties* of snails in the neighbourhood of Vienna, and the Fellows of Cambridge might do the same if so disposed.

General Nott.—The Queen has subscribed 200 guineas to the proposed monument to the memory of General Nott, near his birthplace in Wales; the total amount of which subscription has now reached nearly 2000.

The Queen has appointed Lt.-Col. Smith of the Engineers, late inspector-general of railroads, Mr. Airy the astronomer royal, and Prof. Barlow of the R. Military Academy at Woolwich, commissioners to devise means for obtaining a uniform gauge in the construction of railroads.

Installation of the Jewish Chief Rabbi.—This imposing ceremony took place at the great synagogue, Aldgate, on Wednesday afternoon; when Dr. N. M. Alder, the candidate elected to succeed Dr. Herschel, was installed with all the impressive forms and pomp usual on the solemn occasion. The embellishment and lighting of the synagogue, the profusion of scattered flowers, and the chanting and music, and the richly dressed show of ladies who filled the

galleries, &c., rendered the whole a very splendid spectacle. After the closing of the ark, the chief rabbi preached a sermon in the German language.

M. Raban, a hunchbacked revolutionist, and known as the engraver of many Parisian prints, died a few days ago; and among the gossip of the French capital is the rumour of

An affair likely to lead to the divorce of an eminent artist—the wife of his bosom having formed a connexion with a poet lately elevated in rank.

Meteorology.—Throughout France, as in various parts of England, severe storms have raged within the last fortnight, and heavy floods and much destruction have been the consequence. Among the curious effects, we may notice, that a lightning flash from heaven struck a small church in the street called "d'Enfer."

African Antiquities.—Three hundred cases of African antiquities have been sent to Paris from Algeria, and are to form a separate museum in the Louvre. Our readers are aware that many very interesting remains have been found in the province of Constantine, both Roman and Punic, anterior to the Roman period.

Mr. Andrew Picken.—In the obituary we observed lately with regret the death of Mr. Andrew Picken, an artist of considerable talent, and the son of the late Mr. Andrew Picken, so favourably known to the literary world by his amiable disposition, as well as by his sweet poetry, and productions in other classes, particularly such as related to the Cape of Good Hope, where he resided for several years. His son only reached the early age of thirty, and died after protracted and severe sufferings.

LITERARY NOVELTIES.

LIST OF NEW BOOKS.

The Practice of Angling, particularly as regards Ireland, by O'Gorman, 2 vols. post 8vo, 21s.—Letters on the Unhealthy Condition of the Lower Class of Dwellings, by the Rev. C. Girdlestone, 8vo, 1s. 6d.—Four Lectures on Civil Liberty and Expansion of Intellect, by J. H. Harvey, post 8vo, 4s. 6d.—Correspondance suive et variée, par Mlle. E. Benoist de Malroy, 18mo, 3s. 6d.—German Anthology: a Series of Translations, by James C. Mangan, 3 vols. 12mo, 10s. 6d.—Maro; or Poetic Irritability, in Four Cantos, post 8vo, 5s.—Arithmetical Questions, by W. M. Leod, Part II., 1s.—Felix on the Bat: an Inquiry into the use of the Cricket-Bat, 4to, 12s.—The United States Exploring Expedition; abridged, Part I., 8vo, 3s. 6d.—The Anglo-Indian Passage, by D. L. Richardson, post 8vo, 1s.—Manual of Equity Jurisprudence, by J. W. Smith, 12mo, 8s.—Treasury of Biblical and Theological Literature, by Rev. J. Wilson, Book I., 8vo, 4s. 6d.—Maxims and Opinions of His Grace the Duke of Wellington, 2d edition, 8vo, 12s.—Contributions to Vital Statistics, by G. P. Nelson, 4to, 21s.—Tour through the Valley of the Meuse, by Dudley Costello, post 8vo, 14s.—Barnes on Ephesians, Philippians, &c. &c., post 8vo, 4s. 6d.—The Statute Laws relating to Railways in England and Ireland, by W. Hodges, 8vo, 12s.—James's Christian Charity, 5th edit. sep. 4s.—Coles on the Spine and the Prone System, 12mo, 6s.—The Half-Yearly Abstract of the Medical Sciences, by W. H. Ranking, M.D., post 8vo, 6s. 6d.—An Essay on Animal and Vegetable Life, by E. J. Shearman, M.D., post 8vo, 5s. 6d.—The Mouse, the Moselle, and the Rhine, by B. S., sep., 4s.—Lectures on the Acts of the Apostles, by the late Dr. Hodgson, Dean of Carlisle, 8vo, 12s.—Diary in France, by Rev. Dr. Wordsworth, mainly on Education and the Church, 8vo, 6s. 6d.—History of the Martin Marprelate Controversy, by the Rev. W. Maskell, post 8vo, 8s.—Memorials of a Tour on the Continent, by Robert Snow, post 8vo, 7s. 6d.—The Borgias, or Italy in the Fifteenth Century, an Historical Drama, royal 8vo, 5s.—The Mountains and the Lakes of Switzerland, Italy, &c., by G. E. Hering, 4to, 21s. 6d. plain; folio, 6s. 6d. coloured.—Illustrations to Sir W. C. Harris' Highlands of Ethiopia, 4to, 21s. 2s. plain.—New Illustrations of Shakespeare, by J. Hunter, 2 vols. 8vo, 20s.—Treatise on Contracts of Sale, by C. Blackburn, 8vo, 12s.—Fruits and Farinacea the proper Food of Man, by J. Smith, post 8vo, 9s.

ADVERTISEMENTS.

MISCELLANEOUS.

HER MAJESTY'S THEATRE.

This Evening, SATURDAY, July 12, will be performed Donizetti's celebrated opera, "Anna Bolena." Henry VIII., Sig. Lablache; Percy, Sig. Moriani; Smeaton, Signora Brambilla; Anna Bolena, Madie. Grisi; and Jane Seymour, Mdlle. Rosetti.

Between the acts of the opera will be presented, for the first time, a new and original comedy, composed by M. Perrot for Mdlle. Taglioni, Mdlle. Cetrite, Mdlle. Grahn, and Mdlle. Carlotta Grisi (her last appearance but three).

To conclude with the First Tableau of the third幕 of "La Fanciulla del West," Signora Carlotta Grisi.

Applications for boxes, pit-stalls, and tickets, to be made at the Box-office, Opera-Colonade.—Doors open at seven, and the Opera will commence at half-past seven o'clock.

HER MAJESTY'S THEATRE.

Mdlle. C. GRISI respectfully informs the public that she appears here to-day, Saturday, July 12, in the celebrated opera BENEFICE (last appearance but one) which will take place on THURSDAY next, July 17, on which occasion (by special desire) will be revived Mozart's celebrated Opera, "Così Fan Tutte." Fioridilgi, Madie. Anadice; Castellan, Isabella; Mdlle. Rita Borio; and Despina, Madie. Rosal Cincin; Ferrando, Mdlle. Giudicino; Fenton, Sig. F. Lablache; and Don Alphonso, Sig. Lablache.

The entertainments in the Ballet will consist of the celebrated talents of Mdlle. Taglioni, Mdlle. G. Grisi, and Mdlle. Cetrite; Mdlle. Lablache; Mdlle. Grahn; and Mdlle. Rosetti, and will comprise a new "Pas de Quatre," composed expressly by M. Perrot for Mdlle. Taglioni, Mdlle. C. Grisi, Mdlle. Grahn, and Mdlle. Rosetti.

After each performance from the Last Act of Donizetti's Opera of "Anna Bolena," the principal characters by Mdlle. Grisi, Mdlle. Brambilla, and Sig. Moriani.

To conclude with the Second Act of "La Gioconda," Ghedé, Mdlle. C. Grisi.

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GREAT RUSSIAN CHRONOME-TRICAL EXPEDITION.—E. J. DENT, 82 Strand, and 35 Cockspur Street, has the high and distinguished honour of stating, that his Imperial Majesty the Emperor of Russia has recently condescended to confer on him the appointment and title of Chronometrist to the Russian Emperor, as a reward for the unexampled performance of his Chronometers during the Expedition of 1844. In 1845, his Imperial Majesty the Emperor was pleased to reward the performance of Dent's Chronometers with a Gold Medal of the highest Order of Merit.

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